DOCUMENT RESUME

ED 149 772 IR 005 610

TITLE	Library Photocopying in the United States: With Implications for the Development of a Copyright Royalty Payment Mechanism.
INSTITUTION	King Research, Inc., Rockville, Md.
SPONS AGENCY	National Commission on Libraries and Information Science, Washington, D. C.; National Commission on New Technological Uses of Copyrighted Works, Washington, D.C.; National Science Foundation, Washington, D.C.
PUB DATE	Oct 77
CONTRACT	OEC-0-300-76-0234
NOTE	287p.
AVAILABLE FROM	Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 (Stock No. 052-003-00443-7)
EDRS PRICE	MF-$0.83 HC-$15.39 Plus Postage.
DESCRIPTORS	*Copyrights; *Fees; Interlibrary Loans; Library Materials; *Library Surveys; Public Libraries; *Publishing Industry; *Reprography; Special Libraries; Tables (Data); University Libraries

ABSTRACT

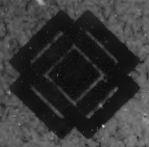
This report presents the results of a study of the amount of photocopying of library materials by library staff in United States libraries. A national survey was conducted from a sample of public, academic, special, and federal libraries to determine the annual volume of photocopying undertaken for interlibrary loans, local users, and intrasystem loans. Since interpretations of the Law concerning eligibility for royalty payment appear to vary, data are also given for the amount of photocopying that occurs under various hypothetical conditions of eligibility as they might be interpreted in the new Copyright Law and in guidelines set forth by the National Commission on New Technological Uses of Copyrighted Works (CONTU) for photocopying for interlibrary loans. The report documents the effects of these hypothetical conditions from the perspective of both libraries and publishers. In addition, the report describes alternative royalty payment mechanisms and discusses some advantages and disadvantages of each from the standpoints of small and large libraries and small and large publishers. A summary of the report presents estimates of total volume of photocopying, analyzes implications of the new law from the perspectives of libraries and publishers, and describes alternative payment mechanisms. (Author)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

LIBRARY PHOTOCOPYING IN THE UNITED STATES



ED 169212

National Commission on Libraries and Information Science

NATIONAL COMMISSION ON LIBRARIES
AND INFORMATION SCIENCE

COMMISSION MEMBERS

Frederick Burkhardt, Chairman
Joseph Becker
Daniel J. Boorstin
Daniel W. Casey
Carlos A. Cuadra
Martin Goland
Louis A. Lerner
Marian P. Leith
Bessie B. Moore
Ralph A. Renick
John E. Velde, Jr.
Julia Li Wu
Mildred E. Younger

COMMISSION STAFF

Alphonse F. Trezza, Executive Director
Douglas S. Price, Deputy Director
Mary Alice Hedge Reszetar, Associate Director
William D. Mathews, Staff Associate for Information Technology

The views and opinions expressed in this Report are those of the contractor, and do not necessarily reflect official position or policy of the National Commission on Libraries and Information Science, the National Science Foundation, the National Commission on New Technological Uses of Copyrighted Works, the Advisory Committee members, or their organizations.

LIBRARY PHOTOCOPYING IN THE UNITED STATES:

WITH IMPLICATIONS FOR THE DEVELOPMENT OF A COPYRIGHT ROYALTY PAYMENT MECHANISM

A report on studies jointly funded by
the National Commission
on Libraries and Information Science,
the National Science Foundation,
and the National Commission
on New
Technological Uses of
Copyrighted Works

Submitted by:

King Research, Inc.
Rockville, Maryland

to

National Commission on Libraries and Information Science

October 1977

For sale by the Superintendent of Documents,
U.S. Government Printing Office, Washington, D.C. 20402

Stock No. 052-003-00443-7

Library of Congress Cataloging in Publication Data

King Research, Inc.

Library Photocopying in the United States.

"A report on studies jointly funded by the National Commission on Libraries and Information Science, the National Science Foundation, and the National Commission on New Technological Uses of Copyrighted Works."

Bibliography: p. 203

1. Photocopying services in libraries--United States.

2. Photocopying processes--Fair use (Copyright)--United States.

3. Copyright--Royalties--United States.

I. Title.
Z681.K55 1977 025.1'29'0973 77-91033

"This work was developed under contract OEC-0-300-76-0234 with the National Commission on Libraries and Information Science."

The views and opinions expressed in this Report are those of the contractor, and do not necessarily reflect official position or policy of the National Commission on Libraries and Information Science, the National Science Foundation, the National Commission on New Technological Uses of Copyrighted Works, the Advisory Committee members, or their organizations.

FOREWORD

The research reported in this study had as its origin the efforts of owners of copyrights--principally, publishers--and the institutional users of copyrighted material--principally, libraries--to come to an understanding on the questions of how much and what kinds of library photocopying should be permitted without payment of fees to the copyright owners. These efforts go back at least to the meetings in the early seventies at Dumbarton Oaks and the Cosmos Club. Each of these resulted in improvements in mutual understanding, but without a means for effective follow-up, no real accomplishments could ensue.

By 1974, when it seemed apparent that Congress would soon complete its task of revising the Copyright Statute, representatives of several concerned constituencies had approached either the Register of Copyrights or the Chairman of the National Commission on Libraries and Information Science (NCLIS) with requests for leadership and sponsorship of a continuing activity to seek an accommodation. Responding to these requests, the Register of Copyrights, Ms. Barbara Ringer and the Chairman of the Commission, Dr. Frederick Burkhardt, organized the Conference On Resolution of Copyright Issues (CORCI), which included representatives of almost every conceivable interested group (more than 40) and which was established with the intention of reconvening as often as necessary to bring the subject matter to a conclusion. This conference, which was also known as the "Upstairs/Downstairs Group," established a working group to develop definitions, proposed mechanisms, procedures, etc. Very quickly, the Working Group found itself stymied by a fundamental disagreement on the actual volume of library photocopying in the United States. A number of studies of various pieces of the problem had been performed, but the coverage was fragmentary and the conclusions were not universally accepted.

At its meeting in Washington, D.C. in April of 1975, CORCI upon urgings from the NCLIS agreed that a national study of photocopying in all types of libraries in the United States was needed. They stated they were prepared to participate in the development of a Request for Proposals (RFP). NCLIS readily agreed.

Aside from its concern with promoting an accommodation between libraries and publishers, the Commission's National Program, as described in its program document (13), has as one of its keystones the sharing of resources among libraries and information centers. Since it can be presumed that a fair portion of this sharing will be accomplished by making copies, rather than transferring original documents, the NCLIS is vitally concerned that there be no substantial impediments to the free flow of information among institutions and

their users. NCLIS agreed to make $25,000 available to help fund the study. Additional funding was sought and obtained from the Division of Science Information of the National Science Foundation (NSF), and, in conjunction with a subcommittee appointed by CORCI, a Request for Proposal was prepared and issued. A fourteen-member evaluation committee selected as best the proposal submitted by the Center for Quantitative Sciences of Market Facts, Inc. (now King Research, Inc.), and they were awarded the contract. Almost immediately thereafter, the National Commission on New Technological Uses of Copyrighted Works (CONTU) suggested that the national study be supplemented by a detailed study of a one-year sample of the transactions of the MINITEX system (the statewide interlibrary loan system of Minnesota) and provided additional funds for that purpose.

Since the study was undertaken, the motives for its initiation would seem to have been overtaken by events. The Copyright Revision Act of 1976 (P.L. 94-553) has been enacted into law; guidelines for classroom and interlibrary loan photocopying have been published in the Conference Report (2) on the bill; and the Association of American Publishers (AAP) has spearheaded the establishment of the Copyright Clearance Center, Inc. (CCCI) to provide a channel for the payment of copying fees where required. None of these events, however, negate the value of this study. If anything, they have enhanced it. The Copyright Revision Act mandates a review of the copying provisions at five year intervals,[1] and this study, completed before the effective date of the Act (1 January 1978), will be an invaluable benchmark against which future changes in patterns can be measured. The data were collected in sufficient detail to permit a variety of additional analyses to be performed, if necessary, so that the future usefulness of the study is not limited to the presentations in this report.

The data base from which these data were extracted will continue to be maintained. Additional tabulations can be undertaken on a cost recoverable basis. Requests for such work should be directed to NCLIS, 1717 K Street, N.W., Suite 601, Washington, D.C. 20036.

Alphonse F. Trezza
Executive Director
National Commission on Libraries
and Information Science

---

[1] This provision was based on a recommendation in a Resolution adopted by the NCLIS on November 20, 1975, which read in part:

> That Congress, in order to ensure timely review of the aforementioned results, incorporate in any copyright legislation enacted in 1976 a provision mandating a review and reconsideration to reflect technological developments not later than 1980, with subsequent reviews for the same purpose at intervals no greater than five years.

PREFACE

On October 19, 1976, the President signed a new Copyright Law that goes into effect on January 1, 1978. This Law was passed after considerable debate and lengthy legal processes. Yet there are many issues that appear to remain unresolved regarding published works. These issues deal primarily with definition of eligibility of photocopying for royalty payment. Some important questions of eligibility persist even though the Commission on New Technological Uses of Copyrighted Works made some important strides in interpreting the Law regarding interlibrary loans. Other important questions involve how the new Copyright Law can best be implemented. The Association of American Publishers, Inc. (AAP) has initiated a plan to implement a Copyright Clearance Center which will serve libraries and publishers in recording eligible photocopying and processing royalty payments. Also, there are many alternative options for handling royalty payments which libraries and publishers are considering. Many libraries and publishers are uncertain as to what impact the new Law will have on them and their communities. Until these uncertainties are resolved, many are not sure of what course of action they should take.

In April 1976, the National Commission on Libraries and Information Science (NCLIS) awarded a contract to King Research, Inc. to provide estimates of the extent of photocopying and to study alternative royalty payment mechanisms. This contract is jointly funded by NCLIS, the National Science Foundation and the Commission on New Technological Uses of Copyrighted Works. The study is based on comprehensive photocopy data collected from a national probability sample of libraries in the United States. These data provide estimates of the total volume of photocopying as well as the amount of photocopying under a variety of conditions of eligibility for royalty payment. In addition, an analysis of interlibrary loan requests provided by MINITEX (Minnesota Interlibrary Telecommunication Exchange) was invaluable for performing mathematical modelling necessary to make accurate estimates of the effects of seasonal variations and amount of photocopying for individual serial titles.

We have made no attempt to interpret the Law in terms of what photocopying will and will not be eligible for royalty payment. It is hoped that these data will

shed some light on the potential impact of the new Law and the implications of various interpretations of eligibility for royalty payments. It is clear from the study results that alternative interpretations of eligibility can have an enormous impact on the volume of photocopying that might be eligible for royalty payments. These data can possibly provide a basis for future compromises that will yield a fair result for all parties involved.

Finally, we hope that results of this study will be useful to individual libraries and publishers in planning their course of action in abiding by the new Law.

There were many people who contributed to this study. The project monitors were Mr. Douglas S. Price from NCLIS, Ms. Helene Ebenfield from NSF and Mr. Robert W. Frase from CONTU. These persons all took a great deal of personal interest in the project and contributed substantially to its direction. The project Advisory Group was exceptionally helpful in clarifying many of the important issues involving the Law and the library and publishing environment. A list of these persons is given on the inside back cover.

The libraries that participated in the study warrant a special acknowledgement since they responded with diligence and care even though requested to perform several burdensome tasks to provide data. We would also like to thank Alice E. Wilcox, Director of MINITEX, for contribution of the MINITEX data.

Authors of this report include Ms. Patricia M. Dowd-Reisin, Mr. R. Boyd Ladd, Mr. Dennis D. McDonald, Mr. Vernon E. Palmour and Ms. Nancy K. Roderer. Dr. William Z. Nasri was a consultant and Ms. Candace H. Olsen served as an analyst on the project. The report was typed by Ms. Jeanette Hurst. Other members of the project staff are listed in Appendix D. Finally, we would like to dedicate this report to the memory of Mr. Rand L. Clark who was a friend and inspiration to everyone who worked on this project.

Donald W. King
Project Director

GLOSSARY

Terms defined below are used frequently throughout the text:

Academic Libraries
College and university libraries. Includes Junior and two-year colleges. Main and departmental libraries on one campus were generally counted as one unit for sampling purposes.

Book
Includes monographs and any other items that are treated as books. This category also includes serial publications which appear annually or less frequently, e.g., annual reviews and other similar publications.

By or For Library Staff
A category of photocopying which excludes photocopying by library patrons on unsupervised or coin-operated machines.

Domestic
Refers to source items published in the United States.

Eligible Photocopy Items
Photocopy items which require a royalty payment to be made to the copyright holder.

Excess Photocopy Items
Photocopy items which are eligible for royalty payments by virtue of their being in excess of photocopying limits set by fair use and guidelines.

Exposure
Refers to the number of sheets of paper produced by paper-to-paper photocopying machines when materials are being duplicated/photocopied.

Federal Libraries
Libraries of Federal agencies. Does not include libraries in universities or private research firms funded by Federal contract.

High-Volume
(a) A library responsible for a comparatively large number of photocopy items eligible for royalty payment. A minority of libraries in the United States are high-volume libraries.

(b) A serial title responsible for a comparatively large number of photocopy items eligible for royalty payment. A minority of serial titles published in the United States are high-volume serials.

Interlibrary Loan (ILL)
Transfer of original or photocopied library materials between libraries and library systems. Excludes intrasystem loan (ISL), the borrowing or lending of library materials carried on between branches or departments within the same library system.

Intrasystem Loan (ISL)
Borrowing or lending of library materials carried on between branches or departments within the same library system (as determined by common funding).

Library Materials
Books, serials, and other materials controlled by the library or in its collection. Sheet music is excluded from this category. Also excluded are memos, forms, cataloging cards, and other office-type photocopying.

Low-Volume
(a) A library responsible for a comparatively small number of photocopy items eligible for royalty payment. The majority of libraries in the United States are low-volume libraries.

(b) A serial title responsible for a comparatively small number of photocopy items eligible for royalty payment. The majority of serial titles published in the United States are low-volume serials.

Multiple Photocopy Items from Multiple Transactions
Unit of measurement used to describe the making of more than one photocopy item from the same source item over the course of more than one transaction.

Multiple Photocopy Items from a Single Transaction
Unit of measurement used to describe the making of more than one photocopy item from a single source item during the course of a single transaction.

Non-ILL (Non-interlibrary loan)
Refers to local user and intrasystem loan requests.

Other (a category of photocopying)
Any type of library controlled material other than books, serials, or sheet music. This category includes technical reports, photographs, etc.

Patron
Individual not employed by a library who requests or obtains photocopying services.

Photocopy Item
A unit of measurement describing the output of a photocopying transaction. A photocopy item may be a duplicate of one or more pages from a book, serial, or other type of source item. The length of a photocopy item is measured in photocopy pages.

Photocopy Pages
A unit of measurement describing the length of the photocopy item or items photocopied from a source item.

Photocopying
The act of duplicating a source item through the use of a machine to produce one or more photocopy items.

Public Libraries
Libraries open to the citizens of a political unit offering services designed for that political unit. Public library systems (central library plus branches) were counted as one unit for sampling purposes.

Purpose of Request
The reason for which a request for library material is made.

Requester
An individual or library responsible for initiating a transaction which may result in the photocopying of library material.

Requesting Library
Used in the context of interlibrary loan or intrasystem loan to identify a library responsible for initiating a transaction which may result in the photocopying of library material.

Royalty
A payment to a copyright holder in compensation for photocopying in excess of fair or applicable guidelines.

School Libraries
Libraries affiliated with schools other than colleges and universities.

Serial
A publication issued in successive parts bearing numerical or chronological designations, which is intended to be continued indefinitely and which may be identified by an ISSN (International Standard Serial Number). Serials include periodicals, newspapers, and the journals, memoirs, proceedings, transactions, etc. of societies. Serials are subject to subscription prices paid in advance. (This eliminates publications that appear annually or less frequently.)

Source Item
An item which is photocopied. A source item may be one or more pages from a book, serial, or any other item which can be photocopied.

Source Item Pages
A unit of measurement describing the length of the source item which is photocopied.

Source of Request
The individual or institution which originates a request.

Special Libraries
Special libraries, for the purpose of this study, are any which can not be classified as Academic, Federal, Public or School libraries. They can be privately endowed, funded by a Federal contract, associated with private industry, local government agencies or other interest groups, or supported in any number of ways. Special libraries are often commercial, industrial, technical, civic or legislative libraries (or information centers) which are considered to be specialized collections.

Transaction

An operation or series of operations in which photocopying is initiated and carried out.

User

Individual who requests or obtains photocopying services in a library. A user may be a library patron or a staff member or department of the library.

TABLE OF CONTENTS

Section	Title	Page
1	SUMMARY OF LIBRARY PHOTOCOPYING IN THE UNITED STATES	1
2	INTRODUCTION AND BACKGROUND	15
2.1	Background	15
2.2	The Studies	17
2.3	Categories of Photocopying	19
2.4	Special Considerations	21
3	TOTAL VOLUME OF PHOTOCOPYING OF LIBRARY MATERIALS BY LIBRARY STAFF IN THE UNITED STATES	25
3.1	Estimated Volume of Photocopy Items and Photocopy Pages	27
3.2	Estimated Volume of Photocopying by Type of Material and Type of Transaction	29
3.3	Estimated Volume of Photocopying of Library Materials that Are Copyrighted and Not Copyrighted	40
4.	IMPLICATIONS OF THE COPYRIGHT LAW AND CONTU GUIDELINES CONCERNING SERIALS FROM THE LIBRARIANS' PERSPECTIVE	51
4.1	Estimated Volume of Photocopying of Serials	54
4.2	Estimated Volume of Photocopying of Serials for Interlibrary Loan	58
4.2.1	CONTU Guidelines Concerning Interlibrary Borrowing of Serials	61
4.2.2	Estimated Volume of Photocopying of Interlibrary Loans Versus Interlibrary Requests	63
4.2.3	CONTU Guidelines and Interlibrary Loan	68
4.2.4	Distribution of Photocopy Items Made By Libraries for Interlibrary Loan	72
4.3	Estimated Volume of Photocopying of Serials for Local Users	77
4.4	Estimated Volume of Photocopying of Serials for Intra-system Loan	89
4.5	Copyright Royalty Library Survey	98
4.5.1	Estimated Number of Photocopying Machines	98
4.5.2	Estimated Volume of Number of Photocopy Exposures	102
4.5.3	Other Photocopying Machines	104
4.5.4	Impact of Copyright Guidelines on Serial Photocopying Requested or Received by Interlibrary Loan	106
4.5.5	Impact of Copyright Guidelines on Serial Photocopying for Local Patrons	109
4.5.6	Preferences for Alternative Royalty Payment Mechanisms	111
4.5.7	Estimated Current Gross Income from Photocopying and Interlibrary Loan	115
4.5.8	Costs for Photocopying	118

TABLE OF CONTENTS

(Continued)

Section	Title	Page
5	IMPLICATIONS OF THE COPYRIGHT LAW AND CONTU GUIDELINES CONCERNING SERIALS FROM THE PUBLISHERS' PERSPECTIVE	121
5.1	Estimates of the Distribution of Photocopying and Interlibrary Loan Requests of Individual Serial Titles Within Libraries	124
5.1.1	Distribution of Photocopying of Interlibrary Loan Requests of Individual Serial Titles Within MINITEX Libraries	124
5.1.2	Distribution of Photocopying of Interlibrary Loan Requests of Individual Serial Titles Within the National Survey Libraries	127
5.2	Distribution of Photocopying of Interlibrary Loan Requests of Individual Serial Titles Over All Libraries	129
5.3	Publishers' Preferences	143
6	IMPLICATIONS FOR THE DEVELOPMENT OF ROYALTY PAYMENT MECHANISMS	155
6.1	Factors to be Considered in Selecting from Among Alternative Royalty Payment Mechanisms	155
6.2	Description of Alternative Royalty Payment Mechanisms	162
6.3	Comparative Evaluation of Alternative Royalty Payment Mechanisms	164
6.3.1	Low-Volume Libraries	166
6.3.1.1	RPM-1: Purchase of Excess Photocopy Items from a Central Agency	166
6.3.1.2	RPM-2: Purchase of Excess Photocopy Items from Individual Publishers	168
6.3.1.3	RPM-3: Optional Higher Subscription Price	169
6.3.1.4	RPM-4: Blanket Higher Subscription Price	170
6.3.1.5	RPM-5: Direct Licensing Between High-Volume Libraries and High-Volume Serials	171
6.3.1.6	RPM-6: Central Agency for Counting, Billing, and Payment	171
6.3.1.7	RPM-7: Royalty Stamps or Coupons	172
6.3.1.8	RPM-8: Payment of Royalties Through Existing Systems	173
6.3.1.9	RPM-9: Payment of Photocopying Machine Fee to a Central Agency	174
6.3.2	High-Volume Libraries	175
6.3.2.1	RPM-1: Purchase of Excess Photocopy Items from a Central Agency	175
6.3.2.2	RPM-2: Purchase of Excess Photocopy Items from Individual Publishers	176
6.3.2.3	RPM-3: Optional Higher Subscription Price	177
6.3.2.4	RPM-4: Blanket Higher Subscription Price	177
6.3.2.5	RPM-5: Direct Licensing Between High-Volume Libraries and High-Volume Serials	178
6.3.2.6	RPM-6: Central Agency for Counting, Billing, and Payment	179

TABLE OF CONTENTS

(Continued)

Section	Title	Page
6.3.2.7	RPM-7: Royalty Stamps or Royalty Coupons	180
6.3.2.8	RPM-8: Payment of Royalties Through Existing Systems	181
6.3.2.9	RPM-9: Payment of Photocopying Machine Fee to a Central Agency	182
6.3.3	Low-Volume Serials	183
6.3.3.1	RPM-1: Purchase of Excess Photocopy Items from Central Agency	183
6.3.3.2	RPM-2: Purchase of Excess Photocopy Items from Individual Publishers	184
6.3.3.3	RPM-3: Optional Higher Subscription Price	185
6.3.3.4	RPM-4: Blanket Higher Subscription Price	186
6.3.3.5	RPM-5: Direct Licensing Between High-Volume Libraries and High-Volume Serials	186
6.3.3.6	RPM-6: Central Agency for Counting, Billing, and Payment	187
6.3.3.7	RPM-7: Royalty Stamps or Royalty Coupons	188
6.3.3.8	RPM-8: Payment of Royalties Through Existing Systems	188
6.3.3.9	RPM-9: Payment of Photocopying Machine Fee to a Central Agency	189
6.3.4	High-Volume Serials	190
6.3.4.1	RPM-1: Purchase of Excess Copies from Central Agency	190
6.3.4.2	RPM-2: Purchase of Excess Photocopy Items for Individual Publishers	191
6.3.4.3	RPM-3: Optional Higher Subscription Price	192
6.3.4.4	RPM-4: Blanket Higher Subscription Price	193
6.3.4.5	RPM-5: Direct Licensing Between High-Volume Libraries and High-Volume Serials	194
6.3.4.6	RPM-6: Central Agency for Counting, Billing, and Payment	194
6.3.4.7	RPM-7: Royalty Stamps or Royalty Coupons	196
6.3.4.8	RPM-8: Payment of Royalties Through Existing Systems	196
6.3.4.9	RPM-9: Payment of Photocopying Machine Fee to a Central Agency	197
6.4	Comments and Conclusions	199
	BIBLIOGRAPHY	203
	APPENDIX A - DATA COLLECTION FORMS	205
	APPENDIX B - SURVEY OF LIBRARY PHOTOCOPYING: METHOD	225
	APPENDIX C - AN ANALYSIS TO PROVIDE ESTIMATES OF THE DISTRIBUTION OF PHOTOCOPYING BY SERIAL TITLES	235
	APPENDIX D - STAFF ACKNOWLEDGEMENT	251

LIST OF TABLES

TABLE NO.		Page
2.1	Categories of Library Photocopying Which are Potentially Eligible for Royalty Payment	19
3.1	Number of Photocopy Items and Photocopy Items Per Library, By Type of Library (1976)	28
3.2	Number of Photocopy Pages, Photocopy Pages Per Library and Photocopy Pages Per Photocopy Item, By Type of Library (1976)	29
3.3	Number of Photocopy Items, By Type of Material, By Type of Library (1976)	31
3.4	Number of Photocopy Items Per Library, By Type of Material, By Type of Library (1976)	32
3.5	Number of Photocopy Pages By Type of Material, By Type of Library (1976)	33
3.6	Number of Photocopy Pages Per Photocopy Item, By Type of Material, By Type of Library (1976)	34
3.7	Number of Photocopy Items By Type of Transaction, By Type of Library (1976)	35
3.8	Number of Photocopy Items Per Library By Type of Transaction, By Type of Library (1976)	35
3.9	Number of Photocopy Pages By Type of Transaction, By Type of Library (1976)	36
3.10	Number of Photocopy Pages Per Photocopy Item By Type of Transaction, By Type of Library (1976)	37
3.11	Number of Photocopy Items By Type of Transaction, By Type of Material, By Type of Library (1976)	38
3.12	Number of Photocopy Items Per Library By Type of Transaction, By Type of Material, By Type of Library (1976)	39
3.13	Number of Photocopy Items By Type of Material, By Copyrighted and Not Copyrighted, By Type of Library (1976)	42
3.14	Number of Photocopy Items Per Library That are Copyrighted and Not Copyrighted By The Type of Material, By Type of Library (1976)	43
3.15	Number of Photocopy Items of Serials That are Copyrighted and Not Copyrighted By Source of Transaction, By Type of Library (1976)	45
3.16	Number of Photocopy Items of Serials Per Library That are Copyrighted and Not Copyrighted By Source of Transaction (1976)	46
3.17	Number of Photocopy Items of Books That are Copyrighted and Not Copyrighted By Source of Transaction, By Type of Library (1976)	47
3.18	Number of Photocopy Items Per Library of Books That are Copyrighted and Not Copyrighted, By Source of Transaction, By Type of Library (1976)	48
3.19	Total Number of Photocopy Items of Other Materials That are Copyrighted and Not Copyrighted, By Source of Transaction, By Type of Library (1976)	49
3.20	Number of Photocopy Items Per Library of Other Materials That are Copyrighted and Not Copyrighted By Source of Transaction, By Type of Library (1976)	50

LIST OF TABLES, cont'd.

TABLE NO.		Page
4.1	Number of Photocopy Items of Serials By Type of Transaction, By Type of Library (1976)	54
4.2	Number of Photocopy Items Per Library of Serials By Type of Transaction, By Type of Library (1976)	55
4.3	Number of Photocopy Items of Serials That are Copyrighted By Type of Transaction, By Type of Library (1976)	56
4.4	Number of Photocopy Items Per Library of Serials That are Copyrighted By Type of Transaction, By Type of Library (1976)	57
4.5	Number of Photocopy Items of Serials for Interlibrary Loans, Copyrighted and Not Copyrighted, By Type of Library (1976)	60
4.6	Estimated Average Number of Photocopied Interlibrary Loans of Serials By Whether They are Copyrighted, By Type of Library (1976)	60
4.7	Number of Photocopy Items of Serials Lent and Borrowed By Type of Library (1976)	64
4.8	Number of Photocopy Items of Serials Per Library Lent and Borrowed by Type of Library (1976)	64
4.9	Number of Photocopy Items of Serials Made for Interlibrary Loan By Type of Lending Library and By Type of Borrowing Library (1976)	65
4.10	Number of Photocopy Items of Serials Requested for Interlibrary Loan By Type of Borrowing Library (1976)	66
4.11	Number of Photocopy Items Per Library of Serials Made for Interlibrary Loans By Type of Borrowing Library (1976)	66
4.12	Number of Photocopy Items of Serials Requested for Interlibrary Loan By Type of Requestor, By Type of Borrowing Library (1976)	67
4.13	Number of Photocopy Items Per Library of Serials Requested for Interlibrary Loan By Type of Requestor, By Type of Library (1976)	67
4.14	Number of Photocopy Items of Domestic Serials Requested for Interlibrary Loan That are Under Six Years Old, Not For Replacement or Classroom Use, and Greater Than Five Copies By Type of Borrowing Library (1976)	70
4.15	Comparison of Results of Photocopy Items of Domestic Serials Requested for Interlibrary Loan from National Library Survey and MINITEX Data Base (1976)	70
4.16	Number of Photocopy Items of Domestic Serials Requested for Interlibrary Loan That are Over Five Years Old, Less Than Six Copies, Current Subscriber Replacement Copy and Faculty/ Classroom By Type of Library--MINITEX, 1976	72
4.17	Number of Libraries With All Royalty Exemptions Not Included--MINITEX (1976)	73
4.18	Proportion of Libraries That Have Various Levels of Photocopy Items By Three Conditions of Eligibility (1976)	74
4.19	Number of Photocopy Items of Serials for Local Users Copyrighted and Not Copyrighted, By Type of Library (1976)	77
4.20	Number of Photocopy Items Per Library of Serials for Local Users Copyrighted and Not Copyrighted, By Type of Library (1976)	77

LIST OF TABLES, cont'd.

TABLE NO.		Page
4.21	Number of Photocopy Items of Copyrighted Serials for Local Users By Domestic and Foreign Publishers, By Type of Library (1976)	78
4.22	Number of Photocopy Items of Copyrighted Serials for Local Users By Domestic and Foreign Publishers, By Type of Library (1976)	79
4.23	Total Number of Photocopy Items of Copyrighted Serials for Local Users By Purpose of Request, By Type of Library (1976)	80
4.24	Number of Photocopy Items of Copyrighted Serials for Local Users By Purpose of Request, By Type of Library (1976)	81
4.25	Distribution of Number of Transactions of Serials Made for Local Users By Type of User, By Type of Library (1976)	82
4.26	Number of Single Copy Transactions of Serials for Local Users, By Type of Library (1976)	83
4.27	Number of Photocopy Items of Domestic, Copyright Serials Made for Local Users By Publications Under Six Years Old, and More Than Five Copies, By Type of Library (1976)	84
4.28	Number of Photocopy Items Per Library of Domestic, Copyright Serials Made for Local Users By Publications Under Six Years Old, More Than Five Copies, By Type of Library (1976)	85
4.29	Proportion of Libraries That Have Various Levels of Photocopy Items By Three Conditions of Eligibility (1976)	85
4.30	Number of Photocopy Items of Serials for Intrasystem Loan By Copyrighted and Not Copyrighted, By Type of Library (1976)	89
4.31	Number of Photocopy Items Per Library of Serials for Intra-System Loan By Copyrighted and Not Copyrighted, By Type of Library (1976)	90
4.32	Number of Photocopy Items of Copyrighted Serials for Intrasystem Loan, By Domestic and Foreign Serials, By Type of Library (1976)	91
4.33	Number of Photocopy Items Per Library of Copyrighted Serials for Loan, By Domestic and Foreign Serials, By Type of Library (1976).	91
4.34	Number of Photocopy Items of Copyrighted Serials for Intrasystem Loans By Purpose of Request, By Type of Library (1976)	92
4.35	Number of Photocopy Items Per Library of Copyrighted Serials for Intrasystem Loans By Purpose of Request, By Type of Library (1976)	92
4.36	Distribution of Number of Transactions of Serials Made for Intrasystem Loans By Type of User, By Type of Library (1976)	94
4.37	Number of Photocopy Items of Domestic Copyright Serials Made For Intrasystem Loan from Publications over Five Years old by type Library (1976)	95
4.38	Number of Photocopy Items of Domestic, Copyright Serials made for Intrasystem Loan From Publications over Five Years old by type of Library (1976)	95
4.39	Number of Photocopy Transactions of Serials Made for Intra-system Loan That Have Single Page and Multiple Copies By Type of Library (1976)	97

LIST OF TABLES, cont'd.

TABLE NO.		Page
4.40	Number of Paper-to-Paper Photocopying Machines Per Library or Library System By Category of Machine, By Type of Library (1976)	100
4.41	Number of Paper-to-Paper Photocopying Machines in U.S. Libraries By Category of Machine, By Type of Library (1976)	101
4.42	Number of Exposures on Paper-to-Paper Photocopying Machines Per Library By Category of Machine, By Type of Library (1976)	103
4.43	Ratio of Average Annual Photocopy Exposures to Machines Per Library, By Type of Library (1976)	104
4.44	Proportion of Libraries Reporting The Existence of Other Photocopying Machines Within Their Parent Institution or Company, By Type of Library (1976)	105
4.45	Proportion of Libraries Estimating The Volume of Exposures Made of Copyrighted Books and Serials on Non-Library Machines, By Type of Library (1976)	105
4.46	Proportion of Libraries Indicating That Cost Would Be Incurred for Checking Outgoing Serial ILL Requests By Type of Screening, By Type of Library (1976)	108
4.47	Proportion of Libraries Indicating That Cost Would Be Incurred for Checking Photocopying of Serials for Local Patrons By Type of Screening, By Type of Library (1976)	110
4.48	Proportion of Libraries Ranking One of Eight Alternative Royalty Payment Mechanisms as "Most Preferred" By Type of Library (1976)	113
4.49	Annual Income for Photocopying and Interlibrary Loan Operations Per Library, By Type of Library (1976)	116
4.50	Annual Income Per Paper-to-Paper Photocopying Machine, Per Library, By Type of Library (1976)	118
4.51	Annual Cost for Photocopying Operations Per Library for Public and Academic Libraries (1976)	119
5.1	Number of Serial Titles Per Library, Number of Photocopy Items and Number of Photocopy Items Per Title By Type of Library-MINITEX (1976)	124
5.2	Distribution of Number of Serial Titles and Number of Photocopy Items for Interlibrary Loan Requests By Type of Library-MINITEX (1976)	126
5.3	Distribution of Number of Serial Titles and Number of Photocopy Items for Interlibrary Loan Requests from Serials Published in the Past Five Years By Type of Library-MINITEX (1976)	128
5.4	Proportion of Serial Titles With Greater Than Five and Ten Photocopy Items Within A Library for National Library Survey and MINITEX Libraries (1976)	127
5.5	Distribution of Number of Serial Titles and Number of Photocopy Items for Interlibrary Loan Requests, By Condition of Eligibility, MINITEX (1976)	130
5.6	Number of Requests By Individual Serials Across 132 Libraries-MINITEX 1976	131

LIST OF TABLES, cont'd.

TABLE NO.		Page
5.7	Number of Serial Titles With Less Than 3,000 Subscribers: 3,000 to 10,000 Subscribers: and Over 10,000 Subscribers, From Three Sources	132
5.8	Number of Titles That are Requested More or Less Than 20 Times and Have More or Less Than 10,000 Subscribers-MINITEX 1976	134
5.9	Proportion of Serial Titles That Have Various Numbers of Photocopy Items Made for Interlibrary Loan Requests By Condition of Eligibility (1976)	135
5.10	Proportion of Serial Titles That Have Various Number of Photocopy Items Made for Local User Requests By Condition of Eligibility (1976)	137
5.11	Distribution of Proportion of Transactions of Serial Titles By Age of Publication, By Type of Library, By Type of Transaction (1976)	139
5.12	Number of Transactions By Type of Publication, By Type of Library, By Type of Transaction	147
5.13	Distribution of Proportion of Transactions of Foreign and Domestic Copyrighted Scientific Serials By Type of Library and By Type of Transaction	148
5.14	Distribution of Proportion of Transactions of Domestic, Copyright, Scientific Serial Titles By Age of Publication, By Type of Library, By Type of Transaction	150
5.15	Distribution of Proportion of Transactions of Foreign, Copyrighted, Scientific Serial Titles By Age of Publication, By Type of Library, By Type of Transaction	151
5.16	Age of Interlibrary Loans for Public Libraries By Field of Science	152
5.17	Age of Interlibrary Loans for Academic Libraries By Field of Science	153
5.18	Age of Interlibrary Loans for Special Libraries By Field of Science	154
B.1	Response Statistics	228
B.2	Standard Errors of Totals of Number of Photocopy Items Requested for Local Users	233
B.3	Standard Errors of Totals of Number of Photocopy Items Requested for Interlibrary Loan	234
C.1	Sample Week Distribution of Photocopy Items-MINITEX 1976	237
C.2	Annual Distribution of Photocopy Items Per Serial Title MINITEX 1976	238
C.3	Distribution of Number of Photocopy Items and Serials for Academic Libraries	246
C.4	Distribution of Number of Photocopy Items By Serials	249

LIST OF FIGURES

FIGURE NO.		PAGE
1	Number of Photocopy Items by Type of Library....	4
2	Number of Photocopy Items by Type of Material...	4
3	Number of Photocopy Items of Serials That Are Copyrighted by Type of Transaction.....	5
4	Number of Photocopy Items of Domestic Serials Requested for Interlibrary Loan - All Items, Items Under 6 Years, Items Not for Replacement or Classroom Use, Items With Greater Than File Copies (1976).....	6
5	Distribution of Interlibrary Loan Photocopy Items by Proportion of Libraries (1976).....	7
6	Distribution of Local Use Photocopy Items by Proportion of Libraries (1976).....	8
7	Distribution of Photocopying of Serials by Proportion of Serials (1976).....	10
8	Distribution of Photocopy Items by Proportion of Serials.....	11
3.1	Number of Photocopy Items by Type of Library....	27
3.2	Number of Photocopy Items by Type of Material...	30
3.3	Number of Photocopy Items by Type of Transaction	34
3.4	Number of Photocopy Items by Type of Material...	40
4.1	Estimated Volume of Photocopying of Serials.....	54
4.2	Number of Photocopy Items of Serials That Are Copyrighted by Type of Transaction.....	56
4.3	Number of Photocopy Items of Serials for Interlibrary Loans by Type of Library (1976).....	59
4.4	Number of Photocopy Items of Domestic Serials Requested for Interlibrary Loans - All Items, Items Under 6 Years, Items Not for Replacement or Classroom, Items With Greater Than 5 Copies (1976).....	68
4.5	Distribution of Interlibrary Loan Photocopy Items by Proportion of Libraries (1976).....	75
4.6	Proportion of Number of Pages of Photocopy Transactions of Serials Made for Interlibrary Loan for All Libraries.....	76
4.7	Proportion of Libraries (%) Distribution of Local Use Photocopy Items by Proportion of Libraries.	87
4.8	Proportion of Number of Pages of Photocopy Transactions of Serials Made for Local User Request	88
4.9	Proportion of Number of Pages of Photocopy Transactions of Serials Made for Intrasystem Loan Request for All Libraries.....	96
5.1	Number of Interlibrary Loans Versus Circulation for Serials.....	133
5.2	Distribution of Serial Photocopy Items by Proportions of Libraries.....	136
5.3	Distribution of Photocopy Items by Proportion of Serials.....	138
5.4	Age Distribution of Photocopy Transactions.....	142

LIST OF FIGURES, cont'd.

FIGURE NO.		PAGE
C.1	Sample Week and Annual Distribution of Photocopy Items Per Serial Title-MINITEX 1976.	241
C.2.a	Number of Photocopy Items (x) Versus Number of Serials (y).....	243
C.2.b	Number of Photocopy Items (x) Versus Number of Serials (y).....	244
C.2.c	Number of Photocopy Items (x) Versus Number of Serials (y).....	245
C.3	Distribution of Photocopy Items by Serial Title for Academic Libraries.....	247
C.3.a	Distribution of Photocopy Items by Serial Title for Academic Libraries.....	248

SUMMARY OF LIBRARY PHOTOCOPYING IN THE UNITED STATES

This report presents the results of a study of the amount of photocopying of library materials by library staff in United States libraries. A national survey was conducted from a sample of Public, Academic, Special and Federal libraries to determine the annual volume of photocopying undertaken for interlibrary loans, local users, and intrasystem loans. Since interpretations of the Law concerning eligibility for royalty payment appear to vary, data are also given for the amount of photocopying that occurs under various hypothetical conditions of eligibility as they might be interpreted in the new Copyright Law and in guidelines set forth by the National Commission on New Technological Uses of Copyrighted Works (CONTU) for photocopying for interlibrary loans. The report documents the effects of these hypothetical conditions from the perspective of both libraries and publishers. In addition, the report describes alternative royalty payment mechanisms and discusses some advantages and disadvantages of each from the standpoints of small and large libraries and small and large publishers. This summary presents estimates of total volume of photocopying, analyzes implications of the new Law from the perspectives of libraries and publishers, and describes alternative payment mechanisms.

Sampling and Data Collection

The sample of libraries for collection of data on the volume and characteristics of photocopies of library materials made on library staff-controlled equipment was a stratified random selection representing the five categories of libraries: Academic, Public, Federal, Special associated with profit-seeking organizations, and Special libraries associated with not-for-profit organizations. The target minimum number of participating libraries by type were: 100 Academic, 100 Public, 62 Federal, 108 Special (74 Profit associated, 34 Non-Profit associated). These target numbers were based in part on the estimated volumes of interlibrary lending for 1972, the most recent year for which comprehensive data could be assembled at the time.

Some large libraries were included in the sample with certainty, to represent themselves. The remaining libraries of each type were stratified by significant variables to facilitate selection of a representative sample from which to estimate totals for the non-certainty libraries. Academic libraries were stratified by size (measured by volumes in collection) and type of institution (University, four year, two year). Public libraries were stratified by population served and by region. Federal libraries were stratified by agency and by volume of interlibrary loans. Special libraries were stratified by size. Participation was invited from a sample larger than the minimum target number, so that ineligible libraries, refusals, and nonresponse would not disrupt the very tight time table.

In order to avoid excessive burden on any library, short sample periods were specified for collecting each major category of information. Each library was asked to record and report information on photocopying volumes for a sample period, to describe characteristics of library materials photocopied for selected days, and to report on requests made during a specified period for interlibrary loans, and on the disposition of those requests. These sample periods ranged from one day to three weeks, and were specified in light of volume reported on a preliminary screener form.

Subsequently, participating libraries were also asked to respond to a questionnaire which addressed questions of costs of photocopying operations, preferences among possible royalty payment mechanisms, judgments concerning relative costs of hypothetical recordkeeping procedures, and a few volume items. Thus, the data collection from libraries involved an initial screener inquiry and four separate, but closely related, requests for information.

In addition, the time limitation on the project did not permit data collection to be spread throughout the year. Therefore, it was important to find adjustment factors to correct for the difference between periods (days of the week and months of the year) when data were collected and the average activity over the year. Such adjustment weights were derived in the course of an analysis of interlibrary loan data for the MINITEX system for the year 1976. The MINITEX data were also used to verify a mathematical model used to project estimates of the distribution of photocopying to the entire year.

A total of 37,032 individual photocopy transactions were reported by the sampled libraries and analyzed. These reports of photocopying included information about each individual photocopy transaction such as type of material (serials, books, other materials), whether copyrighted, type of transaction (interlibrary loan, local user, intrasystem loan) as well as other relevant information.

Total Volume of Photocopying

In 1976, one full year prior to implementation of the new Copyright Law, a substantial amount of photocopying took place in libraries in the United States. It is estimated that there were 36.8 thousand paper-to-paper photocopying machines in the 21,280 libraries from which the sample was chosen. Of 35.3 thousand machines used regularly for photocopying of library materials, 15.4 thousand were used exclusively by patrons for photocopying library and other materials and 19.9 thousand were used by library staff. Thus, the average number of machines per library is less than one. This study addressed only the volume of photocopying performed by library staff of library materials. Even with this limitation, an estimated 114 million photocopy items were made by library staff in that year. Less than one-half of this volume, however, was from copyrighted materials. This means that the per library average is about 2,500 copyrighted items from 54 million photocopies made from copyrighted materials.

Public libraries accounted for the largest share of photocopying of all library materials, with 64 million photocopy items. Special libraries were next, with 26 million photocopy items, followed by Academic libraries, with 17 million, and Federal libraries, with 7 million. (See Figure 1.) The 8,310 Public libraries in the population averaged 7,700 photocopy items per library. The 3,030 Academic libraries averaged 5,500 photocopy items per library, with Special libraries (8,510) averaging 3,100 and Federal libraries (1,430) averaging 4,900 items. The proportion of photocopying from copyrighted materials varied somewhat among the types of libraries. Public libraries had the lowest proportion of photocopying from copyrighted materials (37%) and Special libraries had the highest proportion (69%). Academic libraries did 48 percent and Federal libraries did 58 percent of their photocopying from copyrighted materials. This variation among types of libraries reflects differences in the types of materials photocopied by different types of libraries.

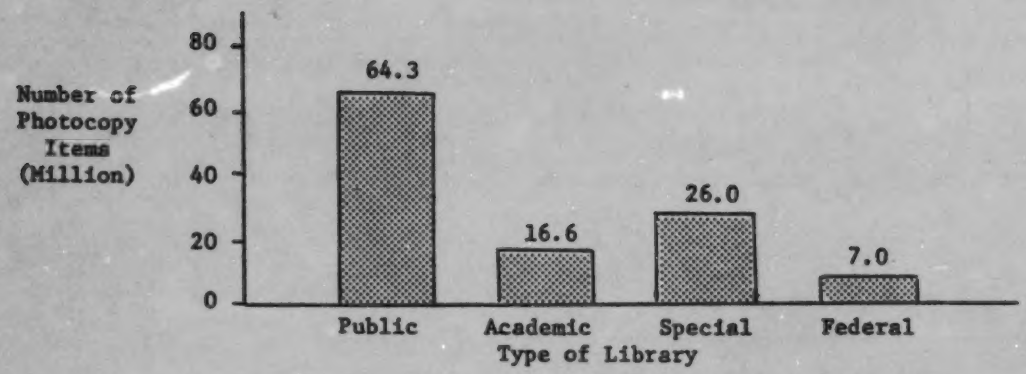


Figure 1. Number of Photocopy Items by Type of Library (1976)

Over all the libraries, serials accounted for 48 million photocopy items; books 14.9 million; and other materials 50.8 million. (See Figure 2.) Only 7 percent of the other materials, however, were identified as being copyrighted, whereas, 79 percent of the photocopy items of serials and 84 percent of the photocopy items made from books were from copyrighted materials. Public libraries accounted for nearly three-fourths of all the photocopying of other materials, which is why they had a low proportion of photocopying from copyrighted materials.

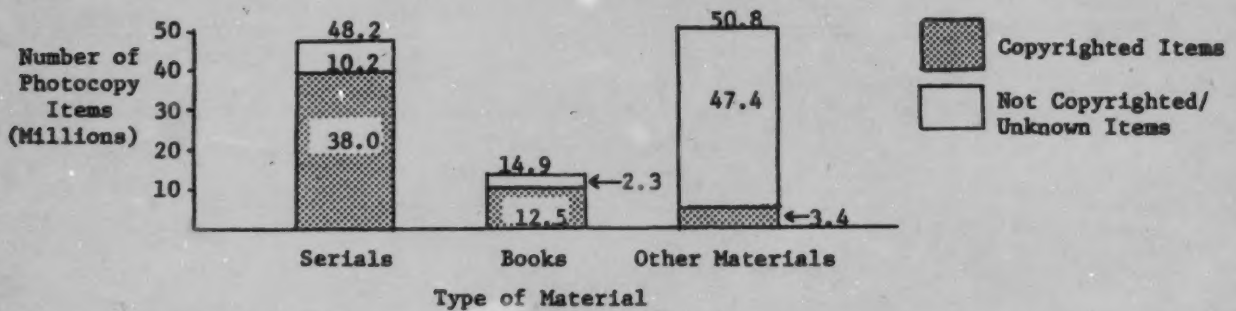


Figure 2. Number of Photocopy Items by Type of Material (1976)

Volume of Serial Photocopying

This report pays particular attention to volume of photocopying of serials. Serials accounted for the largest number of items photocopied from copyrighted materials, at about 38 million photocopy items. Also, libraries and publishers appear to be more concerned about serials than about books or other materials.

Special and Public libraries have the largest number of photocopy items from copyrighted serials, about 16 million and 14 million respectively. Academic and Federal libraries made, respectively, about 5 million and 4 million photocopy items from copyrighted serials. The disparity among the types of libraries is largely accounted for by the number of libraries within each type. When one considers the average number of photocopy items per library, the disparity is much less. Although Federal libraries averaged 2,500 photocopy items per library, the other three types ranged from 1,600 to 1,800 items per library.

It is especially important to observe the categories in which serial photocopying breaks down according to use (interlibrary loan, local use by patrons or library staff, and intrasystem loan to a branch library) since both the Copyright Law and CONTU Guidelines may have different implications for each. Most photocopy items of copyrighted serials (about 22 million) are made for local users. Twelve million items of copyrighted serials are made for intrasystem loans and about 4 million are made for interlibrary loan. (See Figure 3.) For each of the three types of transactions mentioned above, the amount of photocopying performed under different conditions of eligibility is summarized below.

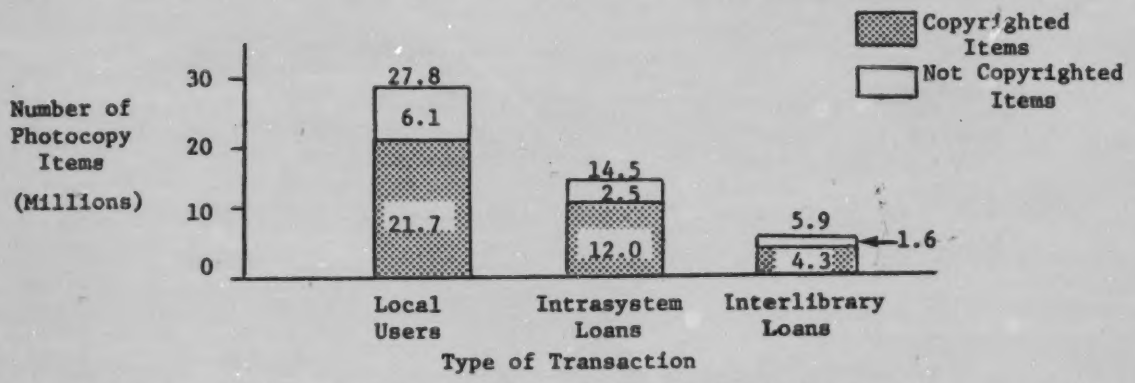


Figure 3. Number of Photocopy Items of Serials That Are Copyrighted by Type of Transaction (1976)

Filled serial interlibrary loan requests for domestic serials account for 3.8 million photocopy items, of which 3.1 million are estimated to be copyrighted. When CONTU guidelines are applied to the 3.1 million, it is estimated that 2.4 million are under six years old and 2.0 million are both under six years old and not used for replacement or classroom use. If the rule of six

copies or more is applied, about 500 thousand photocopy items are subject to royalty payment. (See Figure 4.) This total increases to 1.9 million items if all photocopy items from serials over five years old are also considered eligible.

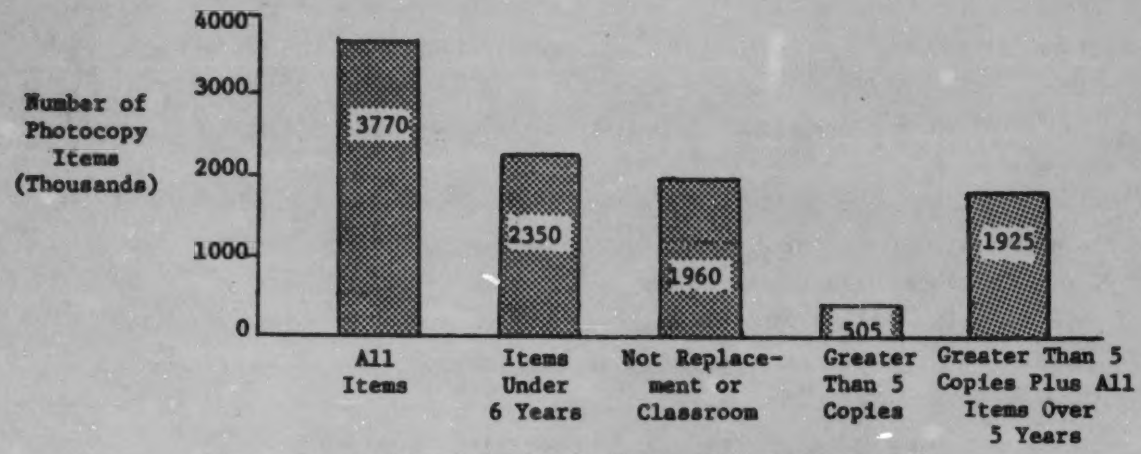


Figure 4. Number of Photocopy Items of Domestic Serials Requested for Interlibrary Loans-All Items, Items Under 6 Years, Items Not for Replacement or Classroom, Items With Greater Than Five Copies (1976)

Considering all interlibrary loan photocopy items, it is estimated that 81 percent of all U.S. libraries will have less than 250 items per year. These libraries, however, account for only 41 percent of the total interlibrary loan photocopy items, for there is a high degree of centralization of photocopying for interlibrary loans. Twenty percent of the libraries request 73 percent of the photocopied interlibrary loans. (See Figure 5.)

Local use accounts for the largest amount of photocopying at 28 million serial photocopy items. Of these, about 22 million are copyrighted and 19 million are from copyrighted domestic serials. If one hypothetically applies CONTU's eligibility conditions for local use as well as for interlibrary loan, one finds that 15 million photocopy items are from serials under six years old, 17 million are from serials having five or more copies made in a library, and 13 million are from serials under six years old with five or more copies made in a library. One also finds that 800 thousand photocopy items for local users were made for replacement or for classroom use by faculty. Another hypothetical condition of

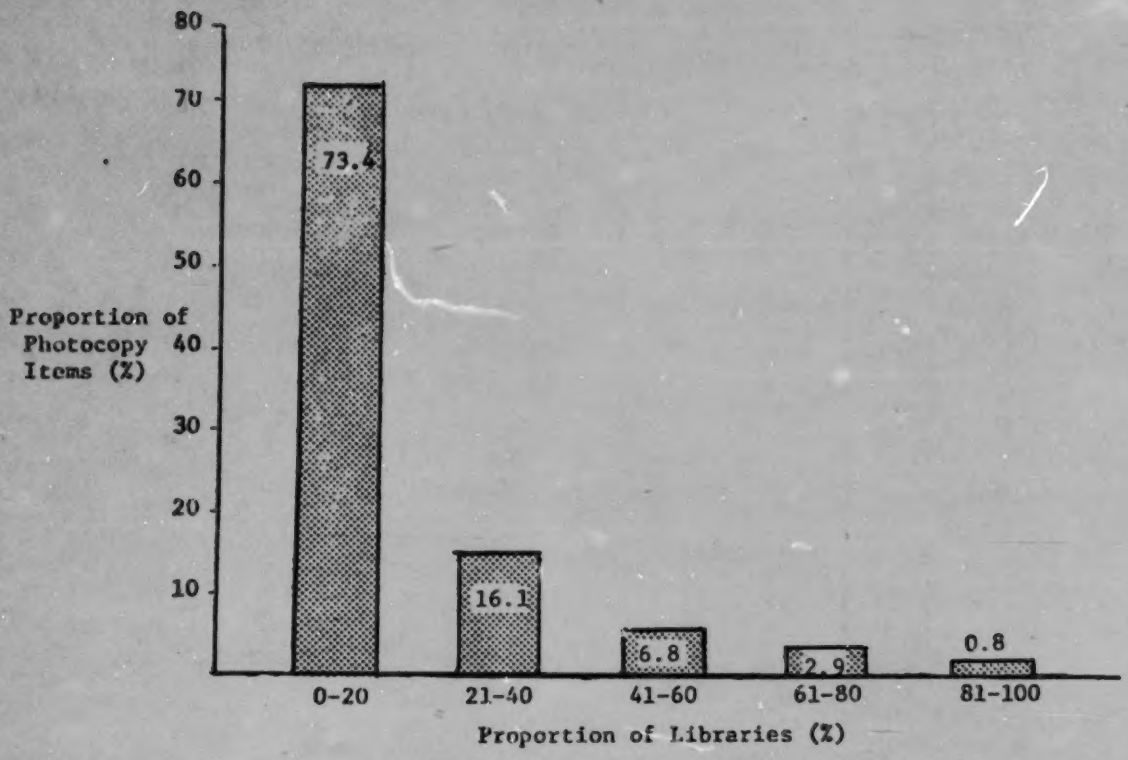


Figure 5. Distribution of Interlibrary Loan Photocopy Items by Proportion of Libraries (1976)

eligibility from Section 108(d) of the Law, involves single copies made for individuals. It is estimated that 82 percent of the photocopy items made for local users involve single copies made for individuals or institutions. Considering all photocopy items made for local use, it is estimated that 62 percent of all U.S. libraries will have less than 250 photocopy items. These libraries account for only seven percent of the total photocopy items made for local use, with the remaining 93 percent made by 40 percent of the libraries. A total of 78 percent of the photocopies made for local use are made by 20 percent of the libraries. (See Figure 6.)

Photocopying for intrasystem loan of serials comes to a total of 14 million photocopy items, of which 10 million are from copyrighted domestic serials. One-half million of these items involve replacement or classroom use. Approximately 7 million of the intrasystem loan photocopy items are from serials under six years old. Finally, it is estimated that about 76 percent of the items photocopied for intrasystem loan are single copies made for individuals

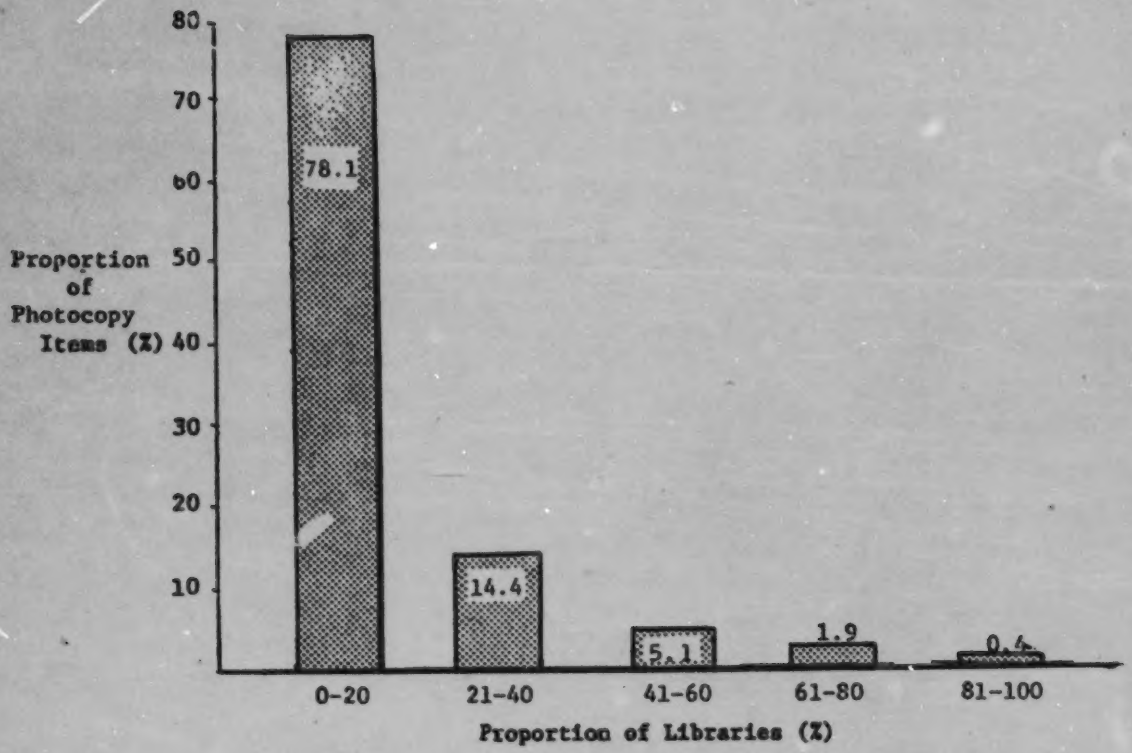


Figure 6. Distribution of Local Use Photocopy Items by Proportion of Libraries (1976)

or other institutions. Over one-third of the transactions for intrasystem loan involve multiple copies of one or two pages, which may be photocopies of tables of contents or title pages made for current awareness.

Libraries and Photocopying Operations

Depending upon final legal interpretation of the conditions of eligibility for royalty payment, libraries may be required to screen outgoing interlibrary loan requests to check for possible exemptions. A majority of libraries report that they would not incur extra costs which could not be absorbed if they were required to perform various screening operations for outgoing serial interlibrary loan requests. Depending upon the specific screening operation, this answer varies among libraries from 84 percent of all libraries to 62 percent of all libraries.

In similar proportions, libraries indicated that they would not incur higher costs if required to screen requests from local patrons. There is an exception, however. About 60 percent of responding libraries reported that extra non-absorbable costs would be incurred in the event that they were required to check for previously made photocopies from a requested title.

No single royalty payment mechanism stood out as being preferred over the others. Libraries in the survey rated as "most preferred" four mechanisms: higher subscription prices for all serials, purchase of royalty stamps or coupons, photocopying machine fees, and purchase of multiple copies or reprints from a single agency. No more than one-third of the libraries, however, rated any of these mechanisms as "most preferred."

In some instances, libraries charge their users for photocopying services. The average annual gross income per library for operation of photocopying machines is $3,085. The largest average annual gross income is $11,544 for Academic libraries, followed by $3,648 for Federal libraries, $2,964 for Public libraries, and $96 for Special libraries. The largest average annual income per machine is $3,607 for Academic libraries, followed by $2,432 for Federal libraries, $1,744 for Public libraries, and $87 for Special libraries. On the average, however, photocopying operations cost Public libraries $4,080 per year and Academic libraries $16,260 per year. This suggests that some libraries, on the average, may currently be incurring net losses for their photocopying operations when their gross income is compared to their operational costs. Sufficient data were not available to estimate annual costs for Federal and Special libraries.

Publishers and Photocopied Serials

Publishers have information needs unlike those of libraries. For example, they need to know how much photocopying of individual serials occurs across all libraries. The estimate is that, over all libraries, the total number of interlibrary loan photocopy items per serial title is 50 or less for 40 percent of serial titles, with these titles accounting for three percent of the total photocopy items. About seven percent of the serials have more than 500 photocopy items made from them. Considering only those photocopy items that are not for replacement or classroom use, that are less than six years old, and that have more than five copies, 91 percent of serial titles have 50 or fewer photocopy

items and very few, if any, have more than 100 photocopy items made of them. There is, in fact, a high concentration of photocopying serials: 86 percent of the photocopying of serials occurs on only 20 percent of the serials. (See Figure 7.)

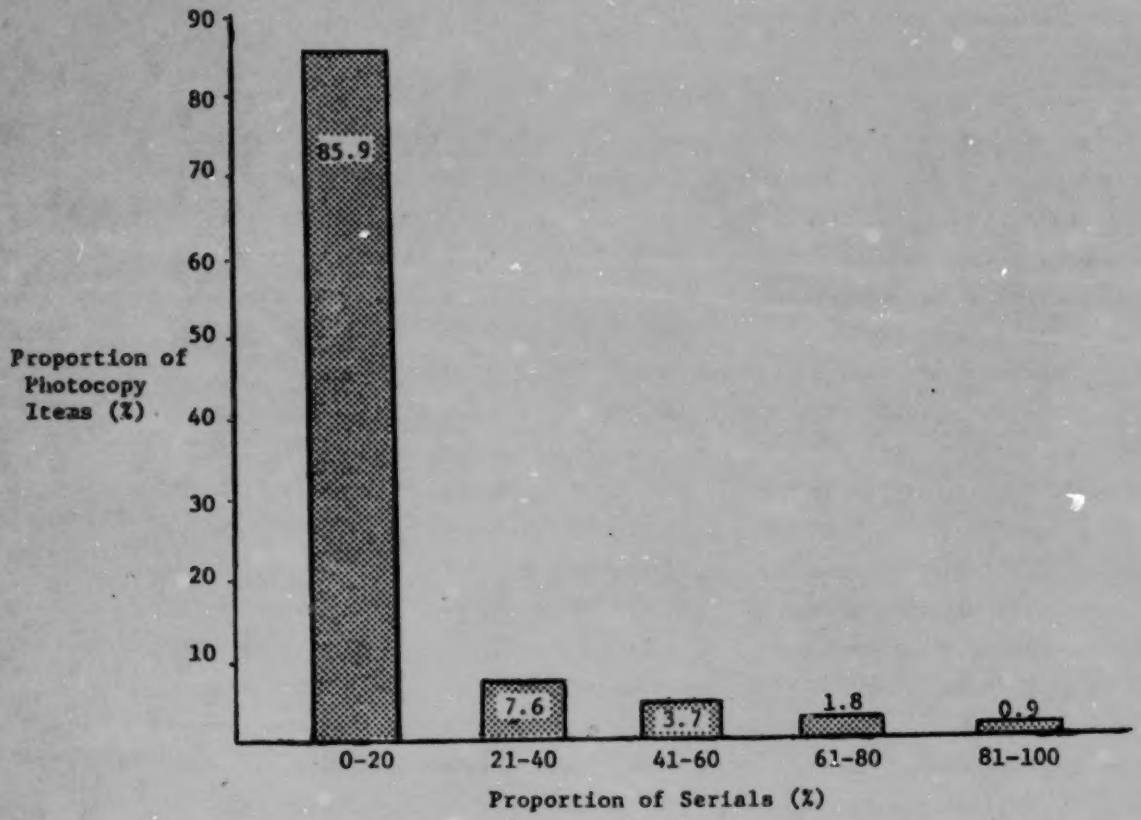


Figure 7. Distribution of Interlibrary Loan Photocopy Items by Proportion of Serials (1976)

For local user photocopying, the estimate is that 67 percent of the copied serials have less than 1,000 photocopy items and a small, but significant, five percent of the titles have more than 5,000 items made of them. Considering only those photocopy items of serials less than six years old and with more than five copies, nearly all of the serials have less than 500 photocopy items. Here, also, a significant proportion of the serials accounts for a major proportion of the photocopy items. About 68 percent of the photocopy items come from 20 percent of the serials. (See Figure 8.)

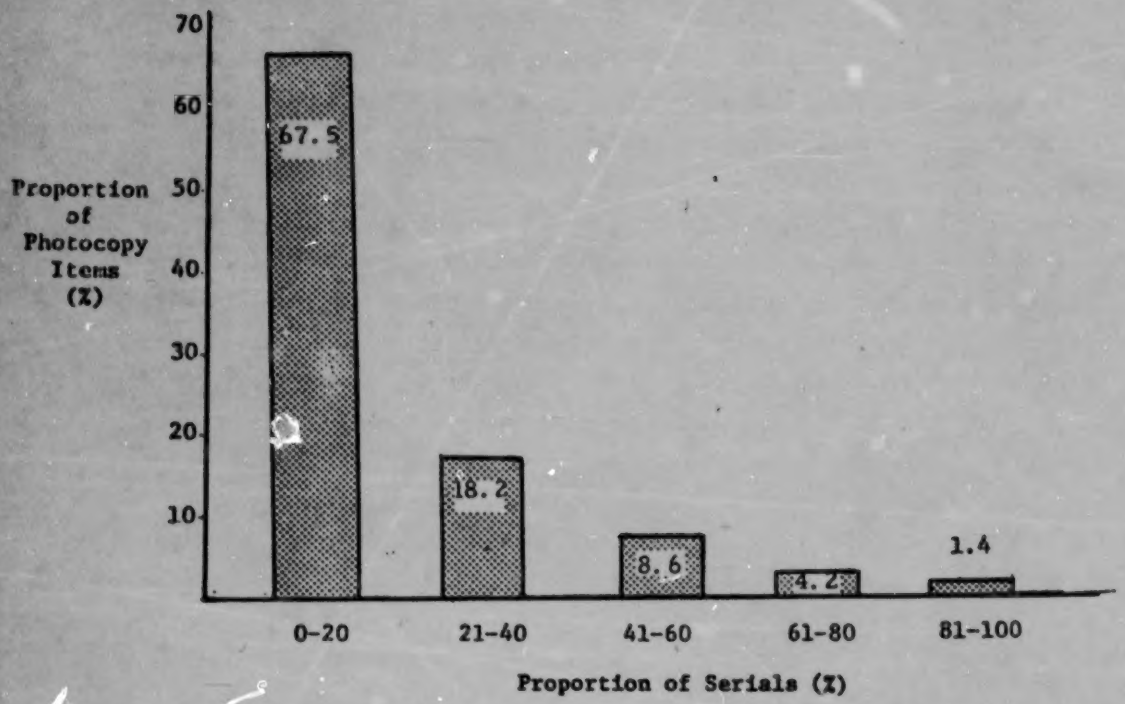


Figure 8. Distribution of Local Use Photocopy Items by Proportion of Serials

According to the recent Indiana University survey of publishers, nearly 50 percent of responding journals expected to receive no royalty payments from a clearinghouse arrangement supplying authorized copies. The average expected payment was about $1.50 per item for those publishers who expected payment. Many publishers appeared to prefer direct licensing of photocopying to clearinghouse arrangements. This survey, however, was made before the Association of American Publishers, Inc. had announced its intention to set up a Copyright Clearance Center. After that announcement, the response may have been different.

Implications for the Development of Royalty Payment Mechanisms

Although the implications of royalty payment mechanisms for libraries and publishers are different, it appears that only a minority of either group would be appreciably affected by the actual payment of royalties, since a large proportion of photocopying takes place in 20 percent of the libraries and with 20 percent of the serials.

No single mechanism appears suitable for all photocopying which might be eligible for royalty payment. Depending upon the final resolution of the eligibility question and the volume of photocopying involved, it is likely that a combination of mechanisms will be required.

Generally speaking, royalty payment mechanisms become more expensive to design and operate as the matching of eligible photocopying volume and royalty payments requires more accuracy and precision. As evidenced by their relatively high ranking of higher subscription prices as an alternative royalty payment mechanism, libraries appear willing to exchange some accuracy for a simplification of their mode of participation in a royalty payment mechanism.

Because of the low number of eligible photocopy items per serial for the majority of copyrighted domestic serials, and because of the potentially low proportion of eligible photocopy items at any one library, it may be more cost-effective, at least initially, for a central agency, clearinghouse, or payment center to concentrate on serving high-volume serials and high-volume libraries. Low-volume libraries and low-volume serials may also find it inexpensive when compared to their own monitoring, depending upon the proportion of photocopying in their libraries which was actually eligible for payment.

Monitoring and enforcing royalty payment may be among the most expensive components of a royalty payment mechanism. If publishers desire monitoring, these functions may be handled most effectively by a central agency if legal questions such as anti-trust can be resolved.

The impact of royalty payments in terms of subscription cancellations is uncertain. We hypothesize that, if this occurred, it would have the most negative impact on small, specialized journals.

Caveats and Statistical Precision of Results

One should keep in mind that behavior of libraries and publishers may be different after the Copyright Law goes into effect in 1978. A change in behavior could substantially alter the number of photocopy items eligible for

royalty payment from the estimates made in the sample. Also, attitudes of libraries and publishers toward alternative royalty payment mechanisms may change (from those observed in recent surveys) after they become familiar with operating under the Law.

Since the data were obtained from a sample of libraries, there is some chance of estimates being higher or lower than those given in this report. In order to give some indication of the statistical precision of the results, standard errors of typical estimates are stated here. Statistical precision estimates made for all libraries are higher than those made by type of library because of the difference in sample sizes. The standard error for interlibrary loan for all photocopies made in all four types of libraries is 3.8 ± .58 million. The interpretation is that the number of photocopies made in all four types of libraries for interlibrary loan requests is between 4.4 million and 3.2 million at 66 percent level of confidence, or, 3.8 ± 1.16 million at 95 percent level of confidence. The number of photocopies made for interlibrary loans by Public libraries would be 1.0 ± .16 million, and for Academic libraries 1.1 ± .13 million. The standard errors for Special and Federal libraries are 1.3 ± .54 million and 0.4 ± .012 million respectively. The estimate for local users is 19.0 ± 3.4 million. The estimates for Public, Academic, Special and Federal libraries are 7.4 ± 3.7; 1.8 ± 1.4; 7.9 ± 2.2; and 2.0 ± 0.6 respectively. It is noted that estimates that involve the proportion of transactions such as the proportion of serials that are copyrighted, the proportion that are from domestic publishers, age of the publications and so on have a substantially higher statistical precision since the sample sizes are over 10,000.

Finally, the estimates derived from the MINITEX data base serve as an excellent verification of estimates of photocopying for interlibrary loans made from the national library survey. It appears that the national library survey data closely resemble those obtained from MINITEX. Also, data from another National Science Foundation study of scientific and technical publishing yield very similar overall results to estimates of total photocopying of scientific and technical serials observed in this study.

SECTION 2

INTRODUCTION AND BACKGROUND

2.1 Background

During the past several years, significant progress has been made in the area of copyright that affects both libraries and holders of copyright. This area is the photocopying of copyrighted materials by United States libraries. Examples of the progress that has been made are the following:

- The establishment by the NCLIS and the Register of Copyrights of the Conference on Resolution of Copyright Issues (CORCI), also known as the "Upstairs-Downstairs Group" which included both publishers and librarians who agreed to lend their support to a study that would objectively analyze data relevant to the issues of library photocopying and the design of a royalty payment mechanism.
- The establishment of the National Commission on New Technological Uses of Copyrighted Works (CONTU).
- The signing by the President of the new Copyright Law on October 19, 1976, to go into effect January 1, 1978.
- CONTU's issuing of the Guidelines dealing with interlibrary loan (ILL) transactions.
- The concrete proposals put forth during 1977 by the Copyright Clearance Center Task Force of the Association of American Publishers (AAP).

This study is an outgrowth of the deliberations of the "Upstairs-Downstairs Group," a body of voluntary representatives of the various interested parties who met during 1974 and 1975 to see if they could reach an agreement on questions raised by library photocopying of copyrighted serials. On the one hand, publishers as copyright holders felt that they deserved monetary compensation for library photocopying since such copying--especially its transmission between libraries via existing channels of interlibrary loan--constituted, in their view, a breach of traditional concepts of "fair use" which was potentially damaging. On the other hand, librarians felt that most of the library photocopying was, indeed, "fair use" and any restrictions on photocopying would harm public access to information. They were also concerned that the record-keeping involved in some payment mechanism clearinghouse proposals might be an expensive administrative headache. Authors felt that their concerns were not being addressed. Finally, the Federal Government was interested in the controversy for many reasons:

- It subsidizes much of the scientific and technical information generated and disseminated in the United States by published material.
- The NCLIS advocates in its National Program Document, "Toward a National Program for Library and Information Services: Goals for Action," the establishment of a national library and information network based, in large part, on resource sharing.
- The Congress was anxious to have the librarians and publishers resolve their differences.
- The Copyright Office was equally anxious for a resolution on the difference for the above reasons.

Objective, quantitative data to evaluate the various arguments did not exist on a nationwide basis. The seminal study in this field, the one carried out in the mid-60s by Sophar and Heilprin of the Committee to Investigate Copyright Problems Affecting Communication in Science and Education (CICP), had put forth the concept of a clearinghouse (9), but the data collected in that study came from a restricted sample and could no longer be considered indicative of the national situation in the late 1970s. The Canadian study of Basil Stuart-Stubbs (10) provided significant insight into the problem, but its quantitative applicability to the American situation was questionable. CORCI found that it could make no further progress without up-to-date national data on library photocopying.

Accordingly, the NCLIS and the National Science Foundation (NSF) agreed to fund a research study to: (a) analyze the volume and distribution of library photocopying via a national survey of United States Public, Academic, Special, and Federal libraries,* and (b) test the feasibility of a royalty payment mechanism. A Request for Proposal (RFP) was issued by NCLIS, and King Research, Inc., a survey research firm located in Rockville, Maryland, was selected to perform the study. Following award of this contract, which began in May 1976, the National Commission on New Technological Uses of Copyrighted Works (CONTU) funded an amendment which provided for the study of one year's interlibrary loan requests received by the Minnesota Interlibrary Telecommunications Exchange (MINNITEX). This latter study, performed in conjunction with the NCLIS/NSF study, provided invaluable data on seasonal fluctuations in demand for individual libraries and on individual libraries' demand for individual serial titles, data which were to become of crucial importance in light of the subsequently-issued CONTU interlibrary loan guidelines.

---

* School libraries/media center were not included in the sampling universe.

2.2 The Studies

In this section we give an overview of the study approach.

The sample of libraries for the NCLIS/NSF photocopying study was a stratified random selection representing the four categories of libraries: Academic, Public, Federal, and Special libraries. The target number of participating libraries by type were: 108 Academic, 100 Public, 62 Federal, and 100 Special. These target numbers were based in part on the estimated volumes of interlibrary lending for 1972, the most recent year for which comprehensive data could be assembled at the time.

Very large libraries and some with unique characteristics were included in the sample with certainty. That is, the probability with which they were selected equalled one, and they were chosen to represent only themselves. The remaining libraries of each type were stratified by significant variables to facilitate selection of a representative sample from which to estimate totals for the non-certainty libraries. Participation was invited from a sample larger than the minimum target number, so that ineligible libraries, refusals, and nonresponses would not disrupt the very tight time table.

Academic libraries were stratified and sub-stratified according to bookstock (number of volumes) and type of academic institution (university/research, other four year, and two year), based on a data tape supplied by the National Center for Education Statistics.

Public libraries in the certainty stratum were selected on the basis of bookstock. For non-certainty Public libraries, stratification was based on the size of population served and geographic region.

Special library sampling was accomplished in stages. Initial samples were drawn from the American Library Directory, the Directory of the Special Libraries and Information Centers, and the Special Library Association Membership Directory. These were sorted into Legal, Medical, Religious, and Special. Overlap with Federal and Academic libraries was then determined.

Federal libraries were stratified according to aggregate interlibrary loans, based upon the 1972 survey of Federal libraries. The Federal library certainty stratum includes both large borrowers and large lenders.

The first solicitation to libraries designated for inclusion in the sample and for alternates was a "screener" form. Follow-up letters were mailed to all addressees that did not respond. Days for data collection for volume, for characteristics, and for purpose of requests were assigned to each library which provided a screener, based on the information reported therein. Volume logs, forms to record characteristics of library materials photocopied, and interlibrary loan forms for serials borrowed were then transmitted to each library which had answered the screener. At this stage, additional refusals and nonresponses occurred. Almost exactly 300 libraries reported on volume of photocopying and on the characteristics of materials copied, plus 44 reports of "no copying," as compared with the combined target of 370. Academic libraries reported very conscientiously on borrowings, but in each of the other library types, a significant number did not report on borrowings.

Subsequently, participating libraries were also asked to respond to a Copyright Royalty Library Survey questionnaire which addressed questions of costs of photocopying operations, preferences among possible royalty payment mechanisms, judgments concerning relative costs of hypothetical recordkeeping procedures, and a few volume items. (Data collection forms are displayed in Appendix A.)

A total of 2,350 volume logs were analyzed, representing a sample of approximately 13,095 transactions. 4,660 interlibrary loan forms were collected and analyzed. A total of 19,277 characteristics forms were analyzed, and 201 copyright royalty library survey questionnaires were returned and analyzed.

The time limitation on the project did not permit data collection to be spread throughout the year. Therefore, it was important to find adjustment factors to correct for the difference between periods (days of the week and months of the year) when data were collected and the average activity over the year. Such adjustments weights were derived in the course of an analysis of interlibrary loan data for the MINITEX system for the year 1976.

The statewide interlibrary loan system of Minnesota, MINITEX, handles approximately 130,000 requests per year from all types of libraries. These libraries are located mainly in Minnesota but also in Montana, North Dakota, and small portions of Wisconsin and Canada.

Analysis of MINITEX interlibrary loan transactions for a full year provided seasonal variations in ILL borrowing by type of library and thereby helped in determining annual volumes of library copying for those libraries participating in the Photocopying Study. It also provided other information including such items as whether or not the requesting library subscribed to the periodical requested, distribution of serial requests over the life of a journal, distribution of requests for specific journal titles, purpose of request, and requests for photocopying in lieu of loan. Detailed MINITEX tabulated data and national survey results will be given in another volume.

2.3 Categories of Photocopying

The categories of photocopying of particular interest to this study are presented in the following table:

TABLE 2.1

CATEGORIES OF LIBRARY PHOTOCOPYING

General Category	Specific Category	Hypothetical Eligibility for Royalty Payment	
		Eligible	Not Eligible
(1) Photocopying of Copyrighted serials by or for library staff	(1.1) for local users	x	
	(1.2) in response to intra-system loan (ISL) requests	x	
	(1.3) in response to inter-library loan requests from other libraries		x
(2) Interlibrary loan (ILL) requests for Copyrighted serials	(2.1) Unfilled requests		x
	(2.2) Requests filled by photocopying by other libraries	x	
	(2.3) Requests filled by other libraries with originals		x

In this table, categories of photocopying are classified as being either eligible or not eligible for royalty payments. We emphasize that this refers to hypothetical eligibility, since definitive legal interpretations of what proportion of photocopying in the "eligible" category would actually require royalty payments do not exist at this time.

There are two general categories of interest: (1) Photocopying of copyrighted serials by or for library staff, and (2) interlibrary loan requests for copyrighted serials. The qualifier "by or for library staff" is added to category (1) to show that photocopying by library users on unsupervised machines (e.g., coin-operated machines) is not considered here. Interlibrary loan "requests" are considered because of the impact of the CONTU ILL guidelines which make interlibrary loan photocopying normally the responsibility of the requesting rather than the photocopying library.

Category (1) may be subdivided into photocopying (1.1) for local users, (1.2) in response to intrasystem loan requests, and (1.3) in response to interlibrary loan requests from other libraries. "Local users" are library patrons and staff who are presumably able to initiate photocopying transactions on a walk-in or local phone call basis. Local users include employees of the library's parent institution. "Intrasystem loan requests" are requests transmitted from other branches or libraries within the same system. Photocopying in both of these categories may hypothetically be eligible for royalty payments. Category (1.3), however, photocopying in response to interlibrary loan requests from other libraries, is normally not considered to be the responsibility of the photocopying library, due to interpretation of the CONTU ILL guidelines.

Category (2) may also be subdivided into three categories: (2.1) unfilled requests, (2.2) requests filled by photocopying by other libraries, and (2.3) requests filled with originals. Normally, only category (2.2) is assumed in this report to be eligible for royalty payment. Loan requests for library materials are processed by an interlibrary loan department or office in the larger libraries, and in smaller libraries one or more staff members have the responsibility for handling interlibrary loans. Loan requests are transmitted from the requesting libraries on a variety of request forms. The most common form is the "standard" interlibrary loan form approved by the American Library

Association. A special form is available for photocopy requests but few libraries use it. Teletype requests arrive in different formats. While the formats of the various forms differ, the content is reasonably similar. The vast majority of filled serial article requests are filled with photocopies, not with original issues of the requested serial title.

Two categories of photocopying are specifically not covered here: photocopying of non-library materials by library staff, and photocopying by library patrons of library materials on equipment provided by the library for unsupervised patron use.

A great deal of photocopying by library staff on library-controlled machines is composed of the copying of correspondence, letters, memos, catalog cards, and other types of office copying. While this is not directly relevant to the development of a royalty payment mechanism, the ability to distinguish between it and copying eligible for payment is. The existence of this category of photocopying requires estimates to be made from a sample of actual photocopying transactions, rather than from post-hoc estimates. This had implications for this study and for transaction-based royalty payment mechanisms.

Photocopying on unsupervised machines is particularly difficult to monitor, and was not included in this study under terms of the study contract. This category is significant in two respects. First, in some libraries the amount of photocopying in this category may be significant, as suggested in a later section of this report. Second, in some libraries, particularly the smaller ones, staff and patrons use the same machine(s). This complicates the monitoring of specific copying categories.

2.4 Special Considerations

After this study had started, the new Copyright Law was signed and CONTU issued its interlibrary loan (ILL) guidelines. These guidelines for the first time specified a maximum volume of allowable photocopying for serial articles requested by means of interlibrary loan. This quantitative limit, a product of considerable negotiation among interested parties, was included in a formal Congressional report, although not in the actual language of the final bill. Significantly, however, these guidelines made compliance the

responsibility of individual libraries with respect to individual serial titles. The practical impact of the above was that for each library a potentially different mathematical distribution existed for the number of times each serial title was requested. This entailed considerably more complex statistical analysis than had been originally anticipated.

The MINITEX analysis allowed the demand for individual titles by individual libraries to be observed over an entire year, and this was useful in projecting to an annual level the findings from the photocopying study's shorter observation periods.

These developments necessitated a categorization of King Research data in line with the Copyright Law and the CONTU ILL guidelines. As will be noted later, however, there is still considerable uncertainty with regard to interpretation and application of the Law and guidelines. Reasons for some of this uncertainty are discussed below.

It is not always easy to determine if items are copyrighted, as will be shown in discussion of the large volume of "copyright unknown" photocopy items. Many alternative payment mechanisms rely upon the identification of photocopy items eligible for payment by library staff; a plain and visible statement of copyright status is a necessity for such mechanisms.

It is necessary to distinguish between two types of photocopying for replacement purposes. Items may be photocopied to replace out-of-print or otherwise unobtainable originals or source items, assuming that an effort has been made to obtain an original. Or, items may be photocopied for replacement use due to mutilation of an original.

It is assumed that serial articles photocopied by or for a teacher in a not-for-profit educational institution and which satisfy the Guidelines for Classroom Copying in Not-for-Profit Educational Institutions with Respect to Books and Periodicals (2) would not be eligible for royalty payment.

A continuing uncertainty is the definition of a library system for royalty payment purposes. We have assumed that libraries within the same system (e.g., branches in a public library system) are part of a single entity. The cohesiveness of systems differs, depending upon the basis of the system. Some are determined by locality or governmental sponsorship, such as public library systems and federal agency library systems. Others may be more loose-knit, such as multi-library cooperatives designed to share audiovisual resources. A definition of "library" and "library system" must still be developed for determining future payment responsibilities. This will also aid in defining what constitutes "intrasystem" photocopying.

The CONTU ILL guidelines would not apply if present interlibrary loan practices were "...supplemented or even largely replaced by a system in which one or more agencies or institutions, public or private, exist for the specific purpose of providing a central source for photocopies." The most practical implication for royalty payment mechanism operation related to ILL transactions of one or more such agencies would be, presumably, to make accounting and payment the responsibility of the photocopying library, as opposed to the requesting library. It may be useful to determine when existing or developing libraries and other agencies should be considered to "exist for the specific purpose of providing a central source for photocopies."

There is still some uncertainty regarding the interpretation of the concept of fair use and the prohibition against systematic copying with regard to non-ILL photocopying. The practical impact of this uncertainty is the following. It appears impossible to estimate for non-interlibrary loan photocopying, with the same degree of certainty as for interlibrary loan photocopying, the proportion of domestic copyrighted serial photocopy items which would be in excess of fair use and therefore potentially eligible for royalty payment. This uncertainty remains even if photocopying for classroom use by faculty and photocopying for library replacement use (still the subject of some uncertainty) and other possibly exempt categories, are excluded. The source of this uncertainty is the concept of "multiple copies" as opposed to "single copies." The essence of this uncertainty is the following: Several photocopy items of an individual source item might be made during the course of a single transaction. Or, several photocopy items of an individual source item might be made over the

course of several transactions, for the same or different requesters. The CONTU ILL guidelines resolved this potential conflict mathematically for interlibrary loans by specifying limits on the number of photocopy items which could be received by a single requesting library from a single copyrighted serial title during a specific period of time, regardless of the number of photocopy items made during the course of a single transaction.

If it were assumed that single photocopy items made for local user or intrasystem loan requests were exempt from payment, without regard to the number of times single serial titles were photocopied during the course of single or multiple transactions, then only a small proportion of the total domestic copyrighted serial photocopy items would be eligible for payment. The data described in this report demonstrate that a very large number of single photocopy items are made in response to local user and intrasystem loan requests. Excluding these from the total number of potentially eligible photocopy items would significantly reduce the volume eligible for payment.

This does not take into account heavy use of individual titles, where the number of photocopy items over time, or the existence of numerous multiple photocopy items during the course of a single transaction, might conceivably cumulate within a single library or library system to the point where photocopying could be perceived as substituting for individual serial subscriptions. The CONTU ILL guidelines addressed these issues for interlibrary loan but the case may be somewhat different for non-ILL photocopying, since there is significantly more local user and intrasystem photocopying of copyrighted domestic serials, and since ILL transactions involve a somewhat higher proportion of single photocopy items per transaction.

A possible analytical solution to this problem would be the application of guidelines similar to those issued by CONTU regarding ILL to non-ILL photocopying. Some of the impacts of this on eligible photocopying volume are discussed in this report.

SECTION 3

TOTAL VOLUME OF PHOTOCOPYING OF LIBRARY MATERIALS BY LIBRARY STAFF IN THE UNITED STATES

One of the most important issues of the past decade concerning library photocopying has been the amount of photocopying that actually takes place in libraries. This report provides estimates of the amount or volume of photocopying of library materials by or for the library staff in Public, Academic, Special, and Federal libraries in the United States.

This section is devoted to estimates of the total volume of photocopying in the United States presented by type of libraries (Public, Academic, Special and Federal), type of library materials (serials, books and other material), and whether the materials are currently copyrighted or not. The photocopying activities for which data were collected are also separated into three main categories -- photocopying of materials by library staff for local library users (patrons or staff) and copying of materials for other libraries, subdivided by intrasystem loans and interlibrary loans. These three types of transactions are referred to in the remainder of the report as local users, intrasystem loan and interlibrary loan.

One could choose among many units of measure to describe the volume of photocopying. However, the following units of measure were chosen to be presented in this report. Three types of library materials include serials, books and other materials (e.g., sheet music, reports, pamphlets, etc.). A transaction involves any request for a library's material that may come from an institution, individual or another library. A transaction could be filled or unfilled and it could be filled by presenting an original copy to the requestor or by presenting the requestor with a photocopy of the material. In this report, we include only those transactions that are filled by a photocopy made by library staff members. A source item is the unit of material being photocopied. This category includes such items as an article, a single page, or specified multiple pages from a serial or a chapter from a book. The number of requested photocopy items refers to the number of times the source item is copied in fulfillment of a transaction. This differs from the number of filled transactions that are

processed at a machine. A single filled transaction may be for multiple copies of the same source item. The total number of photocopy items is the sum of the filled requested photocopy items. This will be the most common unit of measurement in the results presented in this report. Other units of measurement that will be mentioned are number of filled transactions, number of source item pages copied and the number of photocopy pages. Further definitions have been given in the Glossary at the beginning of this report.

* HIGHLIGHTS *

Total Volume of Photocopying

- There were an estimated 114 million photocopy items made of library materials by library staff in 1976. There was an estimated average of 5,400 photocopy items per library in the population of 21,280 libraries from which the sample was chosen.

- The largest share of photocopying of library materials was performed in Public libraries (64 million photocopy items) followed by Special libraries (26 million), Academic libraries (17 million) and Federal libraries (7 million).

- Public libraries also averaged the greatest amount of photocopying (7,700 photocopy items per library). Academic libraries also had a large average amount of photocopying at 5,500 photocopy items per library. Federal libraries averaged 4,900 photocopy items and Special libraries averaged 3,100 photocopy items.

- Most of the materials photocopied were serials (48 million photocopy items) and other materials (51 million). Books were photocopied to the extent of about 15 million photocopy items.

- Of 114 million photocopy items, approximately 76 million were made for local users (patrons and library staff), 27 million for intrasystem loan and 11 million for interlibrary loan.

Total Volume of Photocopying of Copyrighted Materials

- Less than one-half of the volume of photocopying was performed on copyrighted materials. There were about 54 million photocopy items of copyrighted materials made in 1976. This volume amounts to about 2,500 photocopy items per library throughout the United States. A total of 17 million photocopy items was made from materials in which copyright was unknown or unreported.

- The largest amount of photocopying of copyrighted materials was performed in Public libraries (24.0 million photocopy items). A total of 17.9 million photocopy items were made in Special libraries, 7.9 million in Academic libraries and 4.0 in Federal libraries.

- The average amount of photocopying was 2,900 copyrighted photocopy items per Public library, 2,600 copyrighted photocopy items per Academic library, 2,800 copyrighted photocopy items per Federal library, and 2,100 copyrighted photocopy items per Special library.

- A majority of the volume of photocopying of copyrighted materials was from serials (38.0 million photocopy items). There were 12.5 million photocopy items made from copyrighted books and 3.4 photocopy items made from other library materials.

- A total of 21.7 photocopy items of copyrighted serials was made for local users; 12.0 million for intrasystem loan; and 4.3 million for interlibrary loan.

3.1 Estimated Volume of Photocopy Items and Photocopy Pages

There is a very large amount of photocopying of library materials by or for library staff in the United States. It is estimated that in 1976 about 114 million photocopy items were made by staff in the 21,280 libraries from which the national sample was chosen. This means that about 5,400 photocopy items were made per library. Considered in another way, an average of about 20 photocopy items are made in libraries each regular working day of the year. The total volume of photocopying varies substantially among the four major types of libraries. The extent of this variation is displayed in Figure 3.1 below.

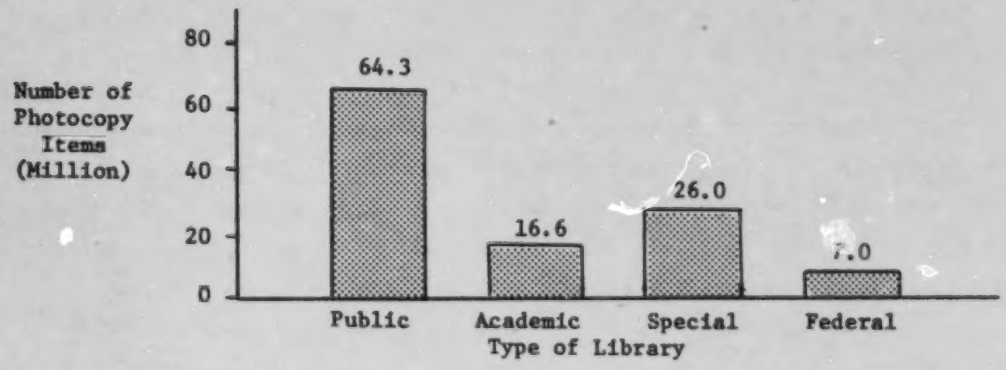


Figure 3.1. Number of Photocopy Items by Type of Library

Public library staff photocopied over one-half of the total volume of photocopy items. They made a total of 64.3 million photocopy items compared to 26 million made in Special libraries, 16.6 made in Academic libraries and 7.0 million made in Federal libraries.

A somewhat different picture emerges when one considers the average number of photocopy items per library as shown in Table 3.1 below.

Table 3.1 NUMBER OF PHOTOCOPY ITEMS AND PHOTOCOPY ITEMS PER LIBRARY, BY TYPE OF LIBRARY (1976)

Type of Library	Number of Photocopy Items (million)	Number of Libraries	Number of Photocopy Items Per Library
Public	64.3	8,310	7,700
Academic	16.6	3,030	5,500
Special	26.0	8,510	3,100
Federal	7.0	1,430	4,900
All Libraries	113.9	21,280	5,400

SOURCE: King Research, Inc.: Library Photocopying in the United States (hereafter referred to as National Library Survey).

Public libraries had the largest average volume of photocopy items among the types of libraries (7,700 photocopy items per library), but the average volume in Academic libraries is also quite large (5,500 photocopy items per library). As one might expect, the average photocopying volume in Special libraries and Federal libraries is lower, being 3,100 photocopy items per Special library and 4,900 photocopy items per Federal library.

Another measure of the volume of photocopying is the total number of photocopy pages made by library staff. In this instance, it is estimated that about 906 million photocopy pages were made in 1976. This represents an average of about 42,600 photocopy pages per library and eight photocopy pages per photocopy item. The latter average gives some indication that the number of item pages photocopied is not extensive. That is, there is little evidence that many books or journal issues are photocopied in their entirety, although there were

some isolated reported instances where this appeared to be true for books. The breakdown of volume of photocopy pages by type of library is given in Table 3.2

Table 3.2 NUMBER OF PHOTOCOPY PAGES, PHOTOCOPY PAGES PER LIBRARY AND PHOTOCOPY PAGES PER PHOTOCOPY ITEM, BY TYPE OF LIBRARY (1976)

Type of Library	No. of Photocopy Pages (million)	No. of Photocopy Pages Per Library (000)	No. of Photocopy Pages Per Photocopy Item
Public	377	45.4	5.9
Academic	219	72.3	13.2
Special	238	28.0	9.2
Federal	72	50.3	10.3
All Libraries	906	42.6	8.0

SOURCE: King Research, Inc.: National Library Survey.

The number of photocopy pages per library ranges from 28,000 in Special libraries up to 72,000 in Academic libraries. The number of photocopy pages per photocopy item is also given in Table 3.2. In this instance, Academic libraries appear to have greater number of photocopy pages per photocopy item (13 pages). The other types of libraries range from about six pages in Public libraries to a little over nine pages in Special and ten in Federal libraries. It will be shown later that the type of materials photocopied varies among the different types of libraries which accounts for the differences in average number of pages photocopied observed above in Table 3.2.

3.2 Estimated Volume of Photocopying by Type of Material and Type of Transaction

Two important characteristics of photocopying are the type of library material involved and the type of transaction that led to photocopying of these materials. The type of material is sub-divided into serials, books and other materials because these types are often published by different organizations. For example, many serials are published by professional societies that are not concerned at all with extent of photocopying of books or other materials.

The breakdown of library photocopying by type of transaction (local user, intra-system loan, and interlibrary loan) is important because photocopy items from these three types of transactions might be treated differently concerning their potential eligibility for royalty payment. For example, guidelines have been set forth by CONTU for interlibrary loans and they have been made part of the Conference Report (2). These two characteristics of photocopying are discussed in detail below.

The total volume of photocopying of serials, books and other materials is shown in Figure 3.2 below.

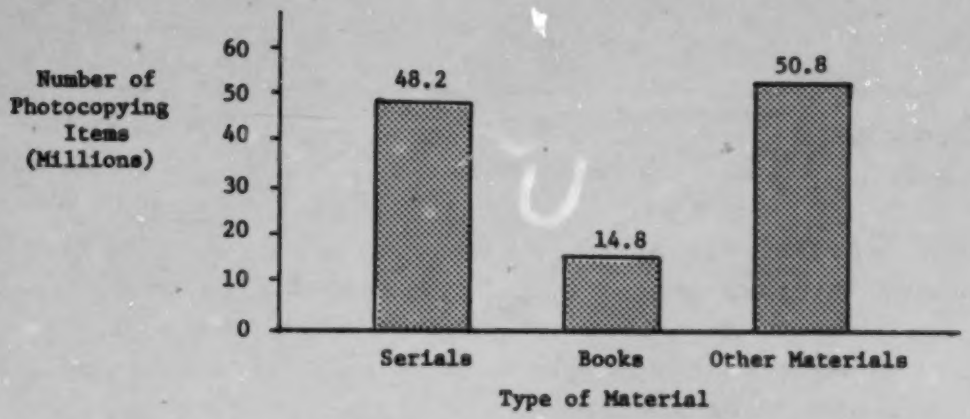


Figure 3.2 Number of Photocopy Items by Type of Material

The amount of photocopying in terms of photocopy items is about the same for serials (48 million) and other materials (51 million), while the total number of photocopy items for books is only 15 million. Although nearly one-half of the number of photocopy items are from other materials, most of these other materials are not copyrighted, as will be shown in Section 3.3.

The relative amount of photocopying from the three types of materials varies among the four types of libraries. These results are given in Table 3.3 on the following page.

Table 3.3 NUMBER OF PHOTOCOPY ITEMS, BY TYPE OF MATERIAL, BY TYPE OF LIBRARY (1976)

(Millions of Photocopy Items)

Type of Library	All Materials	Type of Material		
		Serials	Books	Other Materials
Public	64.3	16.6	8.8	38.9
Academic	16.6	6.3	3.8	6.5
Special	26.0	19.2	1.7	5.1
Federal	7.0	6.1	0.6	0.3
All Libraries	113.9	48.2	14.9	50.8

SOURCE: King Research, Inc.: National Library Survey

Well over one-half of the photocopy items made in Public libraries are from other materials and nearly twice as many photocopy items are made from serials as are made from books. Even within serials, it was observed that Public libraries had a substantial proportion of photocopied items from non-scientific materials such as newspapers and popular magazines or other non-science serials. The proportion of transactions that involved newspapers and popular magazines was 22 percent, the proportion of transactions for other non-scientific serials was 32 percent, and the proportion of transactions involving scientific serials was 46 percent.

About an equal number of photocopy items were made from serials and other materials in Academic libraries. There were about one-half as many photocopy items made from books as from serials in Academic libraries. As might be expected, the proportion of transactions in Academic libraries involving scientific serials was high (65 percent) compared to newspapers and popular magazines (14 percent) and other non-scientific serials (21 percent).

In Special libraries, nearly three-fourths of the photocopy items were from serials and nearly all of the remaining photocopy items were from other materials. As with Academic libraries, most of the transactions of serials involves scientific serials (87 percent) with four percent from newspapers and magazines and nine percent from other non-scientific serials.

Nearly ninety percent of the photocopy items made in Federal libraries were from serials with the remainder split between books and other materials. Of the transactions involving serials, 89 percent were from scientific serials, nine percent were from newspapers and magazines and two percent were from other non-scientific serials.

Public and Special libraries dominate the total volume of photocopy items of serials and Public libraries are dominant in the total volume of photocopy items made from books and other materials. However, the average amount of photocopy items made by libraries presents a different picture as shown in Table 3.4.

Table 3.4 NUMBER OF PHOTOCOPY ITEMS PER LIBRARY, BY TYPE OF MATERIAL, BY TYPE OF LIBRARY (1976)

(Average Number of Photocopy Items Per Library)

	Type of Material			
Type of Library	All Materials	Serials	Books	Other Materials
Public	7,700	2,000	1,100	4,700
Academic	5,500	2,100	1,300	2,100
Special	3,100	2,300	200	600
Federal	4,900	4,300	300	200
All Libraries	5,400	2,300	700	2,400

SOURCE: King Research, Inc.: National Library Survey

The number of photocopy items per library made from serials does not vary much among the four types of libraries. The range is 4,300 photocopy items per Federal library to about 2,000 photocopy items in the remaining types of libraries. However, the average number of photocopy items of books is much larger in Public (1,100 photocopy items) and Academic libraries (1,300 photocopy items) than in Special (200 photocopy items) and Federal (300 photocopy items) libraries. The same holds true for other materials where the average number of photocopy items is greatest in Public libraries (4,700 photocopy items) followed by Academic

(2,100 photocopy items), Special (600 photocopy items) and Federal (200 photocopy items) libraries.

The relative amount of photocopying of library materials is different when measured by photocopy pages. The total number of photocopy pages is estimated to be nearly 1 billion of which 365 million come from other materials, 319 million come from serials and 220 million come from books. Data by type of library are given in Table 3.5 below.

Table 3.5 NUMBER OF PHOTOCOPY PAGES BY TYPE OF MATERIAL, BY TYPE OF LIBRARY (1976)

(Millions of Photocopy Pages)

Type of Library	Type of Material			
	All Materials	Serials	Books	Other
Public	377	54.8	100.0	221.7
Academic	219	64.3	100.8	53.4
Special	238	140.2	10.8	87.0
Federal	72	59.8	8.8	2.9
All Libraries	906	319.1	220.4	365.0

SOURCE: King Research, Inc.: National Library Survey

In terms of total volume of photocopy pages, Special libraries have the greatest amount for serials, Public and Academic libraries for books and Public libraries for other materials.

Considering the average number of pages per photocopy item, one finds that books have the largest amount at about 15 pages. Both serials and other materials are about one-half that amount. These data are displayed below in Table 3.6.

Table 3.6 NUMBER OF PHOTOCOPY PAGES PER PHOTOCOPY ITEM, BY TYPE OF MATERIAL, BY TYPE OF LIBRARY (1976)

(Average Number of Photocopy Pages Per Photocopy Item)

Type of Library	Type of Material			
	All Materials	Serials	Books	Other
Public	5.9	3.3	11.3	5.7
Academic	13.2	10.2	26.5	8.3
Special	9.2	7.3	6.5	16.8
Federal	10.3	9.8	17.3	8.5
All Libraries	8.0	6.1	14.9	7.2

Public libraries average fewer pages per serial than other libraries. However, as indicated above, they photocopy less scientific materials and more newspapers and magazines. The size of photocopy items is particularly large in Academic libraries, but, there was a small number of libraries in the sample where entire books were photocopied which accounts for this difference. The size of photocopy items involving other materials undoubtedly reflects the type of materials involved in the various types of libraries. However, we did not record this information.

As mentioned previously, the type of transaction is also an important factor in assessing photocopying in the United States with regard to the new Copyright Law and its implications. The types of transactions studied were those from local users, intrasystem loan and interlibrary loans. The total amount of photocopying from these transactions is given in Figure 3.3 below.

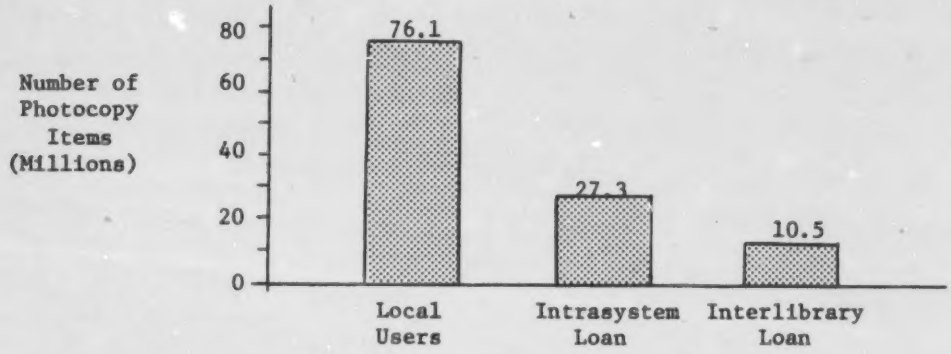


Figure 3.3. Number of Photocopy Items by Type of Transaction

Nearly two-thirds of the photocopy items are made for local users, a category that includes both patrons and library staff. However, as shown in Section 4, most of the photocopying for patrons is from serials. Only about 10 million photocopy items are prepared for interlibrary loan and 27 million are made for intrasystem loan. The breakdown of these by type of material will be shown subsequently. In Table 3.7, the volume by type of transaction is given by type of library

Table 3.7 NUMBER OF PHOTOCOPY ITEMS BY TYPE OF TRANSACTION, BY TYPE OF LIBRARY (1976)

(Millions of Photocopy Items)

Type of Library	All Transactions	Type of Transaction: Local Users	Intrasystem Loan	Interlibrary Loan
Public	64.3	45.3	13.7	5.3
Academic	16.6	9.9	3.8	2.9
Special	26.0	16.5	7.9	1.6
Federal	7.0	4.4	1.9	0.7
All Libraries	113.9	76.1	27.3	10.5

SOURCE: King Research, Inc.: National Library Survey

More than one-half of the photocopy items in all types of libraries are made for local users. The proportion of photocopying for type of transaction seems to be relatively consistent among the four types of libraries. Obviously, that relationship also holds for average number of photocopy items per library, as shown in Table 3.8 below.

Table 3.8 NUMBER OF PHOTOCOPY ITEMS PER LIBRARY BY TYPE OF TRANSACTION, BY TYPE OF LIBRARY (1976)

(Average Number of Photocopy Items Per Library)

Type of Library	All Transactions	Type of Transaction: Local Users	Intrasystem Loan	Interlibrary Loan
Public	7,700	5,500	1,600	600
Academic	5,500	3,300	1,200	1,000
Special	3,100	1,900	900	200
Federal	4,900	3,100	1,300	500
All Libraries	5,400	3,600	1,300	500

SOURCE: King Research, Inc.: National Library Survey

There appear to be some slight differences among types of library, however. Based on average photocopying per library, intrasystem lending seems to be relatively highest for Public and Federal libraries. Interlibrary lending is particularly high in Academic libraries. The relative proportion of photocopying for local users is highest with Public libraries and lowest with Special libraries.

The number of photocopy pages appears to be fairly consistent across sources of transactions. These data are given in Table 3.9.

Table 3.9 NUMBER OF PHOTOCOPY PAGES BY TYPE OF TRANSACTION, BY TYPE OF LIBRARY (1976)

(Millions of Photocopy Pages)

Type of Library	Type of Transaction			
	All Transactions	Local Users	Intrasystem Loan	Interlibrary Loan
Public	377	290.3	51.6	34.7
Academic	219	121.3	46.0	51.7
Special	238	161.1	68.5	8.3
Federal	70	44.2	18.2	7.7
All Libraries	906	615.2	184.8	106.0

SOURCE: King Research, Inc.: National Library Survey

Photocopying for local users accounts for the largest proportion of total volume of photocopy pages in all types of libraries. Photocopying for intrasystem loan is greater than interlibrary loan in all types of libraries except with Academic libraries. In the latter instance, much of the photocopying involves books where the number of pages per transaction item is large.

The average number of photocopy pages per photocopy item is presented in Table 3.10 which follows.

Table 3.10 NUMBER OF PHOTOCOPY PAGES PER PHOTOCOPY ITEM BY TYPE OF TRANSACTION, BY TYPE OF LIBRARY (1976)

(Average Number of Photocopy Pages Per Photocopy Item)

Type of Library	Type of Transaction			
	All Transactions	Local Users	Intrasystem Loan	Interlibrary Loan
Public	5.9	6.3	3.7	6.4
Academic	13.2	12.0	12.0	17.3
Special	9.2	10.6	9.4	5.6
Federal	10.3	10.6	10.1	11.5
All Libraries	8.0	7.9	6.6	9.9

SOURCE: King Research, Inc.: National Library Survey

When average number of photocopy pages per photocopy item is considered, there is not an appreciable difference among types of libraries or type of transaction. The principal difference is with Public libraries where the average number of pages is low across all types of transaction.

A much clearer picture of the amount of photocopying is presented with the number of photocopy items broken down by type of transaction, type of material and type of library as displayed on the following page. In all types of libraries and with all types of material, the number of photocopy items is greatest for local users, then intrasystem loan, and finally, interlibrary loan. The difference is less pronounced with serials when comparing photocopying for local users (27.8 million) and intrasystem loans (14.5 million) than with interlibrary loans (5.9 million). There is a large drop in the number of books by Public libraries from local users (5.7 million) to intrasystem loans (2.2 million). Perhaps Public libraries are more likely to lend original book copies than are the other types of libraries.

A somewhat different picture occurs when the average number of photocopy items per library is considered. These data are given in Table 3.12 which follows.

Table 3.11 NUMBER OF PHOTOCOPY ITEMS BY TYPE OF TRANSACTION, BY TYPE OF MATERIAL, BY TYPE OF LIBRARY (1976)

(Millions of Photocopy Items)

Type of Library	Type of Transaction															
	All Transactions				Local Users				Intrasystem Loans				Interlibrary Loans			
	All Mat.	Serials	Books	Other Mat.	All Mat.	Serials	Books	Other Mat.	All Mat.	Serials	Books	Other Mat.	All Mat.	Serials	Books	Other Mat.
Public	64.3	16.6	8.8	38.9	45.3	9.0	5.7	30.6	13.7	5.4	2.2	6.1	5.3	2.2	0.9	2.2
Academic	16.6	6.3	3.8	6.5	9.9	2.5	1.7	5.7	3.8	2.0	1.6	0.2	2.9	1.8	0.5	0.6
Special	26.0	19.2	1.7	5.1	16.5	12.3	0.8	3.4	7.9	5.6	0.7	1.6	1.6	1.3	0.2	0.1
Federal	7.0	6.1	0.6	0.3	4.4	4.0	0.3	0.1	1.9	1.5	0.2	0.2	0.7	0.6	0.1	<.1
All Libraries	113.9	48.2	14.9	50.8	76.1	27.8	8.5	39.8	27.3	14.5	4.7	8.1	10.5	5.9	1.7	2.9

SOURCE: King Research, Inc.: National Library Survey

Table 3.12 NUMBER OF PHOTOCOPY ITEMS PER LIBRARY BY TYPE OF TRANSACTION, BY TYPE OF MATERIAL, BY TYPE OF LIBRARY (1976)

(Average Number of Photocopy Items Per Library)

Type of Library	Type of Transaction															
	All Transactions				Local Users				Intrasystem Loans				Interlibrary Loans			
	All Mat.	Serials	Books	Other Mat.	All Mat.	Serials	Books	Other Mat.	All Mat.	Serials	Books	Other Mat.	All Mat.	Serials	Books	Other Mat.
Public	7,700	2,000	1,000	4,700	5,500	1,100	700	3,700	1,600	600	300	700	600	300	100	300
Academic	5,500	2,100	1,300	2,100	3,300	800	600	1,900	1,200	700	500	100	1,000	600	200	200
Special	3,100	2,300	200	600	1,900	1,400	100	400	900	700	100	200	200	200	-	-
Federal	4,900	4,300	400	200	3,100	2,800	200	100	1,300	1,000	100	100	500	400	100	-
All Libraries	5,400	2,300	700	2,400	3,600	1,300	400	1,900	1,300	700	200	400	500	300	100	100

SOURCE: King Research, Inc.: National Library Survey

The average number of photocopy items per library reflects the fact that individual Federal libraries have the greatest serial photocopying for local users and intrasystem loans. The average number of photocopy items is least with serial and book interlibrary loans, but by far the heaviest by individual Academic libraries. Book photocopying for local users is greatest in Public and Academic libraries. Individual Academic libraries seem to have greater intrasystem loans of photocopy items of books than do the other types of libraries, and this appears to hold for interlibrary loans, but to a less pronounced degree.

3.3 Estimated Volume of Photocopying of Library Materials that Are Copyrighted and Not Copyrighted

One of the most important questions addressed by this study is what proportion of photocopied library materials is currently copyrighted. It is noted that determination of the copyright was established by the librarians who reported on the volume logs and photocopy characteristics sheets. Some copyright data were not found by them or were not reported. However, the proportion of reported data is very high. The number of photocopies of library materials that are copyrighted is given in Figure 3.4.

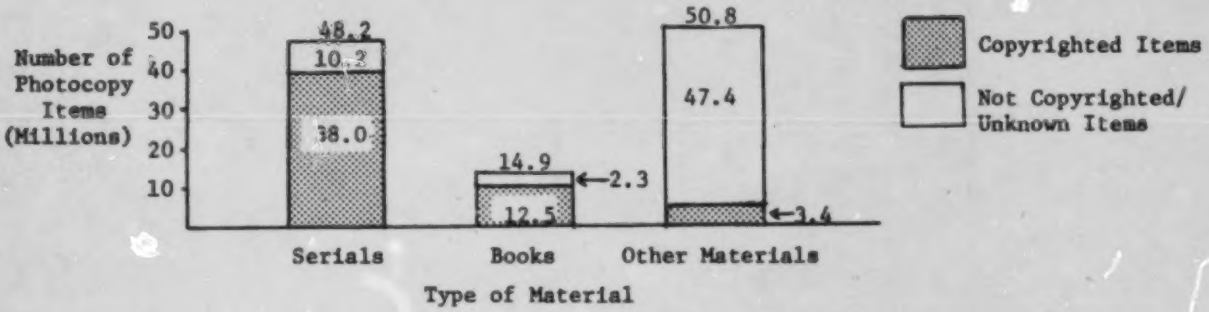


Figure 3.4. Number of Photocopy Items by Type of Material

It is clear that a very high proportion of serials and books are copyrighted and that only a small proportion of other materials are copyrighted. If the proportion of materials in which it is unknown whether they are copyrighted is the same as those known, the proportion of copyright is estimated to be 85 percent for serials, 87 percent for books and only nine percent for other materials.

This proportion of copyrighted serials that were photocopied (85%) is much higher than the proportion of serial titles reported to be copyrighted by publishers in a survey conducted by Indiana University (3). In that study, about 70 percent of the serials were reported to be copyrighted.

A more complete breakdown of the amount of photocopied items that were made from copyrighted materials is given on the following page in Table 3.13 by type of material and by type of library. From the standpoint of potential royalty payments, the picture is very different from that presented with non-copyrighted materials included. The annual volume of photocopy items of copyrighted materials is substantially greater in serials (38 million) than in books (12.5 million), or other materials (3.4 million). The relationship of volume of photocopy items of copyrighted material is highest for serials in all types of libraries. The volume is highest for copyrighted serials in Public and Special libraries, but highest for copyrighted books in Public and Academic libraries. With other materials most of the photocopy items made from copyrighted materials were made in Public libraries, which made about 2.2 million photocopy items of copyrighted other materials. Special libraries made about 1 million photocopy items of other materials, while 150 thousand were made in Academic libraries and only about 40 thousand were made in Federal libraries.

As shown in Table 3.14, individual libraries of each of the four types average about the same amount of photocopying of copyrighted serials, ranging from 1,600 photocopies per library in Academic libraries to 2,500 photocopies per library in Federal libraries. Both Public and Academic libraries average many more photocopy items of copyrighted books than Special and Federal libraries.

The annual volume and average number of photocopies per library are given by serials, books and other materials by source of transaction and by type of library in Tables 3.15 through 3.20. Number of photocopy items and average number per library of copyrighted serials are displayed in Tables 3.15 and 3.16. We find that most of the photocopying of copyrighted serials is done for local users (21.7 million) and intrasystem loans (12.0 million) with about 4 million done for interlibrary loan. This pattern holds among the four types of libraries. In all instances, the total number of photocopy items for local users is greater than photocopying for the other two sources of transactions combined.

Table 3.13 NUMBER OF PHOTOCOPY ITEMS BY TYPE OF MATERIAL, BY COPYRIGHTED AND NOT COPYRIGHTED, BY TYPE OF LIBRARY (1976)

(Millions of Photocopy Items)

	Type of Material															
	All Materials				Serials				Books				Other Materials			
Type of Library	All Items	Copy-righted	Not Copy-righted	Un-known	All Serials	Copy-righted	Not Copy-righted	Un-known	All Books	Copy-righted	Not Copy-righted	Un-known	All Other Mat.	Copy-righted	Not Copy-righted	Un-known
Public	64.3	24.0	29.2	11.0	16.6	14.2	1.6	0.8	8.8	7.6	0.9	0.3	38.9	2.2	26.7	9.9
Academic	16.6	7.9	5.2	3.4	6.3	4.7	1.0	0.6	3.8	3.1	0.6	0.1	6.5	0.1	3.6	2.7
Special	26.0	17.9	5.6	2.6	19.2	15.5	2.2	1.5	1.7	1.4	0.2	0.1	5.1	1.0	3.2	1.0
Federal	7.0	4.0	2.6	0.3	6.1	3.6	2.3	0.2	0.6	0.4	0.1	<.1	0.3	<.1	0.2	0.1
All Libraries	113.9	53.8	42.6	17.3	48.2	38.0	7.1	3.1	14.9	12.5	1.8	0.5	50.8	3.4	33.6	13.8

SOURCE: King Research, Inc.: National Library Survey

Table 3.14 NUMBER OF PHOTOCOPY ITEMS PER LIBRARY THAT ARE COPYRIGHTED AND NOT COPYRIGHTED BY THE TYPE OF MATERIAL, BY TYPE OF LIBRARY (1976)

(Average Number of Photocopy Items Per Library)

	Type of Material															
	All Materials				Serials				Books				Other Materials			
Type of Library	All Items	Copy-righted	Not Copy-righted	Un-known	All Serials	Copy-righted	Not Copy-righted	Un-known	All Books	Copy-righted	Not Copy-righted	Un-known	All Other Mat.	Copy-righted	Not Copy-righted	Un-known
Public	7,700	2,900	3,500	1,300	2,000	1,700	200	100	1,000	900	100	40	4,700	300	3,200	1,200
Academic	5,500	2,600	1,700	1,100	2,100	1,600	300	200	1,300	1,000	200	30	2,100	50	1,200	900
Special	3,100	2,100	700	300	2,300	1,800	300	200	200	200	20	10	600	100	40	1,200
Federal	4,900	2,800	1,800	200	4,300	2,500	1,600	100	400	300	50	30	200	30	100	100
All Libraries	5,400	2,500	2,000	800	2,300	1,800	300	100	700	600	90	30	2,400	200	1,600	600

SOURCE: King Research, Inc.: National Library Survey

With books (Tables 3.17 and 3.18), it is also found that more photocopying of copyrighted books is performed for local users than intrasystem or interlibrary loans. Public and Academic libraries photocopy more copyrighted books for requests from all three sources of transaction from the standpoint of total volume and average photocopies per library.

Nearly twice as much photocopying of copyrighted other materials is done for local users as intrasystem and interlibrary loans together. This pattern holds true for all four types of libraries, although most of the total annual volume is accounted for in Public libraries. Similar patterns hold for average photocopy per library.

Table 3.15 NUMBER OF PHOTOCOPY ITEMS OF SERIALS THAT ARE COPYRIGHTED AND NOT COPYRIGHTED BY SOURCE OF TRANSACTION, BY TYPE OF LIBRARY (1976)

(Millions of Photocopy Items)

	Source of Transaction															
	All Transactions				Local Users				Intrasystem Loan				Interlibrary Loan			
Type of Library	All Items	Copy-righted	Not Copy-righted	Un-known	All Local Users	Copy-righted	Not Copy-righted	Un-known	All Intra-system Loans	Copy-righted	Not Copy-righted	Un-known	All Inter-library Loans	Copy-righted	Not Copy-righted	Un-known
Public	16.6	14.2	1.6	0.8	9.0	7.6	0.9	0.6	5.4	4.7	0.5	0.2	2.2	1.9	0.2	0.1
Academic	6.3	4.7	1.0	0.6	2.5	2.0	0.3	0.2	2.0	1.6	0.3	0.1	1.8	1.1	0.5	0.3
Special	19.2	15.5	2.2	1.5	12.3	9.7	1.8	0.8	5.6	4.8	0.3	0.6	1.3	1.0	0.1	0.2
Federal	6.1	3.6	2.3	0.2	4.0	2.5	2.0	0.1	1.5	0.9	0.6	.1	0.6	0.4	0.2	0.1
All Libraries	48.2	38.0	7.1	3.1	27.8	21.7	4.5	1.6	14.5	12.0	1.7	0.8	5.9	4.3	0.9	0.7

SOURCE: King Research, Inc.: National Library Survey

Table 3.16 NUMBER OF PHOTOCOPY ITEMS OF SERIALS PER LIBRARY THAT ARE COPYRIGHTED AND NOT COPYRIGHTED BY SOURCE OF TRANSACTION (1976)

(Average Number of Photocopy Items Per Library)

	Source of Transaction															
	All Transactions				Local Users				Intrasystem Loan				Interlibrary Loan			
Type of Library	All Items	Copy-righted	Not Copy-righted	Un-known	All Local Users	Copy-righted	Not Copy-righted	Un-known	All Intra-system Loans	Copy-righted	Not Copy-righted	Un-known	All Inter-library Loans	Copy-righted	Not Copy-righted	Un-known
Public	2,000	1,700	200	100	1,100	900	100	100	600	600	100	-	300	200	-	-
Academic	2,100	1,600	300	200	800	700	100	100	700	500	100	-	600	400	100	100
Special	2,300	1,800	300	200	1,400	1,100	200	100	700	600	-	100	150	100	-	-
Federal	4,300	2,500	1,600	100	2,800	1,700	1,000	100	1,000	600	400	-	400	200	100	-
All Libraries	2,300	1,800	300	100	1,300	1,000	200	100	700	600	100	-	300	200	-	-

SOURCE: King Research, Inc.: National Library Survey

Table 3.17 NUMBER OF PHOTOCOPY ITEMS OF BOOKS THAT ARE COPYRIGHTED AND NOT COPYRIGHTED BY SOURCE OF TRANSACTION, BY TYPE OF LIBRARY (1976)

(Millions of Photocopy Items)

	Source of Transaction											
	Local Users				Intrasystem Loan				Interlibrary Loan			
Type of Library	All Local Users	Copy-righted	Not Copy-righted	Un-known	All Intra-System Loans	Copy-righted	Not Copy-righted	Un-known	All Inter-Library Loans	Copy-righted	Not Copy-righted	Un-known
Public	5.7	4.9	0.6	0.2	2.2	2.0	0.2	0.0	0.9	0.8	0.1	0.1
Academic	1.7	1.4	0.2	0.1	1.6	1.5	0.1	0.0	0.5	0.2	0.3	0.0
Special	0.8	0.6	0.1	0.0	0.7	0.6	0.0	0.0	0.2	0.2	0.0	0.0
Federal	0.3	0.2	0.0	0.0	0.2	0.1	0.1	0.0	0.1	0.0	0.0	0.0
All Libraries	8.5	7.1	1.0	0.3	4.7	4.8	0.4	0.1	1.7	0.4	0.4	0.1

SOURCE: King Research, Inc.: National Library Survey

Table 3.18 NUMBER OF PHOTOCOPY ITEMS PER LIBRARY OF BOOKS THAT ARE COPYRIGHTED AND NOT COPYRIGHTED, BY SOURCE OF TRANSACTION, BY TYPE OF LIBRARY (1976)

(Average Number of Photocopy Items Per Library)

	Source of Transaction											
	Local Users				Intrasystem Loan				Interlibrary Loan			
Type of Library	All Local Users	Copy-righted	Not Copy-righted	Un-known	All Intra-System Loans	Copy-righted	Not Copy-righted	Un-known	All Inter-Library Loans	Copy-righted	Not Copy-righted	Un-known
Public	700	590	80	20	300	240	20	6	100	90	10	7
Academic	600	450	80	30	500	500	30	1	200	50	100	4
Special	100	80	10	5	100	70	5	3	-	20	6	2
Federal	200	4	1	8	100	100	40	-	100	6	10	20
All Libraries	400	340	40	20	200	230	20	4	100	50	20	6

SOURCE: King Research, Inc.: National Library Survey

Table 3.19 TOTAL NUMBER OF PHOTOCOPY ITEMS OF OTHER MATERIALS THAT ARE COPYRIGHTED AND NOT COPYRIGHTED, BY SOURCE OF TRANSACTION, BY TYPE OF LIBRARY (1976)

(Millions of Photocopy Items)

Type of Library	Source of Transaction: Local Users: All Local Patrons	Local Users: Copyrighted	Local Users: Not Copyrighted	Local Users: Unknown	Intrasystem Loan: All Intra-System Loans	Intrasystem Loan: Copyrighted	Intrasystem Loan: Not Copyrighted	Intrasystem Loan: Unknown	Interlibrary Loan: All Inter-Library Loans	Interlibrary Loan: Copyrighted	Interlibrary Loan: Not Copyrighted	Interlibrary Loan: Unknown
Public	30.6	1.2	20.5	8.9	6.1	0.5	4.9	0.6	2.2	0.5	1.2	0.4
Academic	5.7	0.1	3.4	2.1	0.2	0.0	0.2	0.0	0.6	0.0	0.0	0.5
Federal	3.4	0.7	1.7	0.5	1.6	0.2	1.4	0.0	0.1	0.0	0.1	0.0
Special	0.1	0.0	0.1	0.0	0.2	0.0	0.1	0.1	<1	-	0.0	0.0
All Libraries	39.8	2.1	25.7	12.0	8.1	0.7	6.6	0.8	2.9	0.6	1.3	1.0

SOURCE: King Research, Inc.: National Library Survey

Table 3.20 NUMBER OF PHOTOCOPY ITEMS PER LIBRARY OF OTHER MATERIALS THAT ARE COPYRIGHTED AND NOT COPYRIGHTED BY SOURCE OF TRANSACTION, BY TYPE OF LIBRARY (1976)

(Average Number of Photocopy Items Per Library)

	Source of Transaction											
	Local Users				Intrasystem Loan				Interlibrary Loan			
Type of Library	All Local Patrons	Copy-righted	Not Copy-righted	Un-known	All Intra-System Loans	Copy-righted	Not Copy-righted	Un-known	All Inter-Library Loans	Copy-righted	Not Copy-righted	Un-known
Public	3,700	145	2,470	1,070	700	55	595	75	300	65	145	45
Academic	1,900	45	1,115	7,010	100	3	55	4	200	21	7	185
Special	400	90	200	115	200	25	165	4	-	1	10	2
Federal	100	20	45	20	100	4	80	50	-	-	2	14
All Libraries	1,900	100	1,210	565	400	30	3,120	35	100	25	60	45

SOURCE: King Research, Inc.: National Library Survey

SECTION 4

IMPLICATIONS OF THE COPYRIGHT LAW AND CONTU GUIDELINES CONCERNING SERIALS FROM THE LIBRARIANS' PERSPECTIVE

The results of the national library survey can be presented from two quite distinct perspectives depending on whether they are directed to an organization that is subject to royalty payments (libraries) or one that is eligible to receive the payments (publishers and authors). In the first instance, librarians may wish to know how many libraries appear to have materials subject to royalty payment, how much photocopying of library materials is involved, and what proportion of the materials is subject to royalty payment. Publishers, on the other hand, are interested in knowing how many published materials in a library are eligible for payment, but even more so how much photocopying of a single publication is performed across all libraries and what proportion of the titles achieve certain levels of photocopying. This section is addressed to the extent of photocopying of serials that takes place in an individual library. Section 5 presents data for individual serial titles summed across libraries which is more important to publishers. In these two sections, we concentrate on photocopying of serials since they represent the largest amount of photocopying of library materials that are copyrighted and they seem to be of most concern to all participants.

The first part of this section deals with the overall estimates of serial photocopying that involves copyrighted material. Since the Copyright Law involves different interpretations concerning photocopying for the three principal types of transactions, the following three parts are directed to each type (interlibrary loan, local users, and intrasystem loan). The total amount of photocopying subject to royalty payment is discussed for photocopying from each type of transaction. The impact of CONTU guidelines on this number is discussed in detail for interlibrary loans. Some hypothetical eligibility conditions are also applied to photocopying for local users and intrasystem loans in order to simulate the impact of possible future guidelines involving these photocopy items. The final section discusses librarians' attitutdes toward possible royalty payment mechanisms, their ability to implement these mechanisms, and other library data related to photocopying.

* HIGHLIGHTS *

Volume of Serial Photocopying

- 48.2 million photocopy items are made of serials, of which 38.0 million are copyrighted. This comes to an average of 2,300 and 1,800 photocopy items per library, respectively.

- Public libraries make 14.2 million photocopy items per year, which comes to 1,700 per library. Academic libraries make 4.7 million photocopy items or 1,600 per library. Special libraries make 15.5 photocopy items or 1,800 per library. Federal libraries make 3.6 million photocopy items or 2,500 per library.

- Most photocopy items of copyrighted serials are made for local users (21.7 million), followed by intrasystem loan (12.0 million) and interlibrary loan (4.3 million).

Volume of Interlibrary Loan Photocopying

- Of 6.0 million serial requests for interlibray loan, 4.3 million are from domestic publications. The ones filled by photocopies yielded 3.8 million photocopy items of which 3.1 million are copyrighted.

- When CONTU guidelines are applied to the number of photocopy items made for interlibrary loans, it is estimated that 2.4 million are under six years old and 2.0 million are under six years old and are not used for replacement or classroom use. When the rule of six copies or more is also applied, there are about 500 thousand photocopy items remaining that are subject to royalty payment.

- If photocopy items for serials over five years old are all eligible for royalty payment, the total increases to 1.9 million photocopy items.

- Of 132 libraries served by MINITEX, only 58 are found to be required to pay <u>any</u> royalty payments when CONTU guidelines are applied (not considering serials over five years old). These libraries averaged 53 photocopy items subject to royalty payments.

- Considering only serials under six years old and excluding photocopy items made for replacement or classroom use, 93 percent of all U.S. libraries should have less than 250 photocopy items eligible for royalty payment and 2 percent should have more than 1,000 copies eligible for payment. The latter percent will decrease substantially if the rule of six copies or more is applied.

Volume of Local User Photocopying

- Of 27.8 million photocopy items made for local users (patrons and library staff), 21.7 million are estimated to be copyrighted. Of these, 19.0 million are estimated to be made from domestic serials.
- There are about 800 thousand photocopy items made for replacement by library or classroom use by faculty.
- Approximately 14.9 million photocopy items are made for local users from serials under six years old.
- About 17.4 million photocopy items are made for local users for serials that have more than five copies made within a library.
- Approximately 12.9 million photocopy items are made from serials under six years old and that have more than five copies made within a library.
- About 82 percent of the transactions for local use involve single copies made for local patrons (individuals and institutions).
- Considering only serials under six years old and excluding photocopy items made for replacement or classroom use, 67 percent of the libraries should have less than 250 photocopy items eligible for royalty payment. About 20 percent of the libraries will have over 1,000 such photocopy items, five percent over 5,000 photocopy items and one percent of the libraries over 10,000 photocopy items.

Volume of Intrasystem Loan Photocopying

- Of the 14.5 million photocopy items prepared for intrasystem loan, 12.0 million are copyrighted. Of these 9.8 are estimated to be made from domestic serials.
- There are about 500 thousand photocopy items of intrasystem loans made for replacement by the library or classroom use by faculty.
- Approximately 7.2 million photocopy items made for intrasystem loan are from serials under six years old.
- About 76 percent of the transactions involve single copies made for local patrons (individuals and institutions).

4.1 Estimated Volume of Photocopying of Serials

The estimated total amount of photocopying for serials is shown in Figure 4.1 below for number of photocopy items made for local users, intrasystem loan and interlibrary loan.

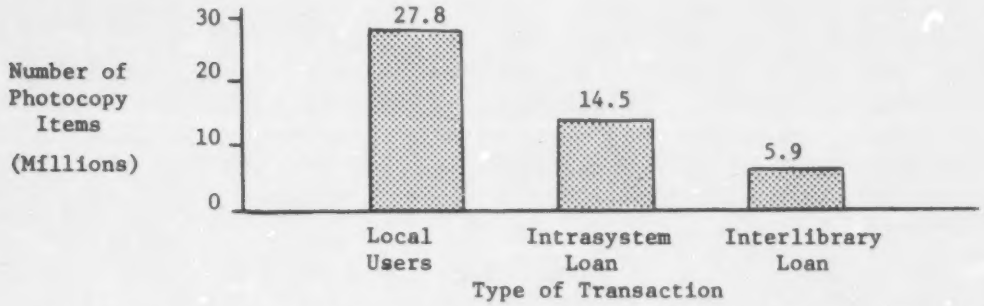


Figure 4.1 Number of Photocopy Items for Serials by Type of Transaction (1976)

The total volume of photocopying for local patrons (27.8 million) is greater than either interlibrary loan (5.9 million) or intrasystem loan (14.5 million).

Estimates of the total annual volume of photocopy items made from serials is given in Table 4.1 by source of transaction and by type of library.

TABLE 4.1 NUMBER OF PHOTOCOPY ITEMS OF SERIALS BY TYPE OF TRANSACTION, BY TYPE OF LIBRARY (1976)

(Millions of Photocopy Items)

Type of Library	All Transactions	Type of Transaction		
		Local Users	Intrasystem Loan	Interlibrary Loan
Public	16.6	9.0	5.4	2.2
Academic	6.3	2.5	2.0	1.8
Special	19.2	12.3	5.6	1.3
Federal	6.1	4.0	1.5	0.6
All Libraries	48.2	27.8	14.5	5.9

SOURCE: King Research, Inc.: National Library Survey

The relationship over type of transaction exists for Public, Special and Federal libraries. However, Academic libraries have nearly as many interlibrary loans as intrasystem loans.

Even though Public libraries account for the largest proportion of serial photocopying from all sources of transaction, they are not at all dominant when considering average photocopying per library, as shown in Table 4.2.

TABLE 4.2 NUMBER OF PHOTOCOPY ITEMS PER LIBRARY OF SERIALS BY TYPE OF TRANSACTION, BY TYPE OF LIBRARY (1976)

(Average Number of Photocopy Items Per Library)

Type of Library	All Transactions	Type of Transaction		
		Local Users	Intrasystem Loan	Interlibrary Loan
Public	2,000	1,100	600	300
Academic	2,100	800	700	600
Special	2,300	1,400	700	200
Federal	4,300	2,800	1,000	400
All Libraries	2,300	1,300	700	300

SOURCE: King Research, Inc.: National Library Survey

The Federal libraries have the largest average amount of photocopying at 4,300 photocopy items per library. The other types of libraries are remarkably close in average amount of photocopying at just about 2,000 photocopy items per library. However, the average amount of photocopying for local users varies more among the four types of libraries. Federal libraries have by far the most photocopying for local users with 2,800 photocopy items per library. The other libraries range from 800 to 1,400 photocopy items per library. The pattern of photocopying for intrasystem loans follows that of the total with Federal libraries making the most on the average (1,000 photocopy items per library) and with the other three types of libraries very close to one another. The average photocopying per library of interlibrary loan is highest for Academic libraries (600) and somewhat less for Federal (400), Public (300) and Special (200) libraries. It is emphasized that these estimates are for lending and not borrowing. Estimates for the latter

will be given in the next section. There is some difference since some types of libraries appear to lend more than they borrow and vice versa.

The proportion of photocopying of serials that are copyrighted is shown in Figure 4.2 for local users, intrasystem loans and interlibrary loans.

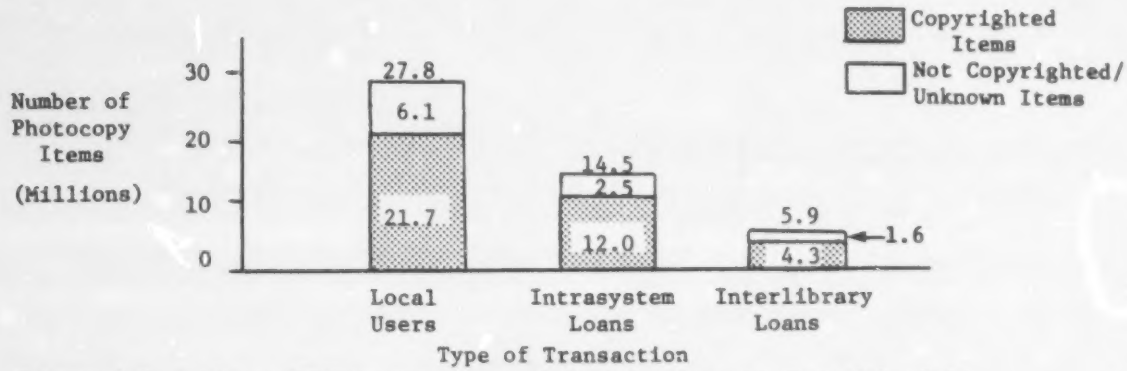


Figure 4.2 Number of Photocopy Items of Serials that are Copyrighted by Type of Transaction (1976)

Special libraries have the greatest volume of photocopying of copyrighted serials at about 15.5 million photocopy items. Public libraries also have a large amount with 14.2 million photocopy items. Academic and Federal libraries account for 4.7 and 3.6 million photocopy items, respectively.

The amount of photocopying of serials that is copyrighted is given by type of transaction and type of library in Table 4.3.

TABLE 4.3 NUMBER OF PHOTOCOPY ITEMS OF SERIALS THAT ARE COPYRIGHTED BY TYPE OF TRANSACTION, BY TYPE OF LIBRARY (1976)

(Millions of Photocopy Items)

Type of Library	All Transactions	Type of Transaction		
		Local Users	Intrasystem Loan	Interlibrary Loan
Public	14.2	7.6	4.7	1.9
Academic	4.7	2.0	1.6	1.1
Special	15.5	9.7	4.8	1.0
Federal	3.6	2.5	0.9	0.4
All Libraries	38.0	21.7	12.0	4.3

SOURCE: King Research, Inc.: National Library Survey

Most of the analysis in this report is based on the amount of copyrighted serials that is photocopied. We find a total of at least 38 million photocopy items made of copyrighted serials in the United States. However, over the remainder of section 4, we will show that a large portion of these photocopy items may not be eligible for royalty payment depending on one's interpretation of the Copyright Law. These alternative royalty payment conditions vary by type of transaction, which is why this breakdown is emphasized in the remainder of this section. As mentioned above, photocopying for local users forms the greatest proportion of photocopying of serials that are copyrighted. Of this amount, Special and Public libraries account for 80 percent of the total. The same proportion also holds for intrasystem lending of photocopied serials. The largest amount of interlibrary lending of serials is performed by Public libraries. They account for about 45 percent of the total. Again, however, when average photocopy items per library is studied a somewhat different picture is revealed. These data are given in Table 4.4 below.

TABLE 4.4 NUMBER OF PHOTOCOPY ITEMS PER LIBRARY OF SERIALS THAT ARE COPYRIGHTED BY TYPE OF TRANSACTION, BY TYPE OF LIBRARY (1976)

(Average Photocopy Items Per Library)

Type of Library	All Transactions	Type of Transaction		
		Local Users	Intrasystem Loan	Interlibrary Loan
Public	1,700	900	600	200
Academic	1,600	700	500	400
Special	1,800	1,100	600	100
Federal	2,500	1,700	600	200
All Libraries	1,800	1,000	600	200

SOURCE: King Research, Inc.: National Library Survey

By eliminating non-copyrighted serials and those that were listed as unknown or not reported, we find a similar array of data as that observed with all materials included. However, the average number of intrasystem loans of serials that are photocopied is about the same for all types of libraries.

It is emphasized that, while analysis of the average number of photocopy items per library is interesting, a far more significant statistical result is the distribution of libraries that have various levels of photocopying. In the next sub-sections, we will present an estimate of the proportion of libraries that make less than 250 photocopy items per year; 250 to 1,000; 1,000 to 5,000; 5,000 to 10,000; and over 10,000 photocopy items per year. These data will be presented under different conditions of eligibility for royalty payment.

The next three sub-sections discuss details of photocopying performed for interlibrary loans, local users and intrasystem loans respectively. The interlibrary loans are discussed first since a great deal of effort has been devoted by CONTU in providing guidelines for interpreting allowable levels of photocopying for interlibrary loan. Some of these guidelines might also be applied in the future to photocopying involving other types of transaction as well. Also, MINITEX provided us with an enormously valuable data base for analysis of interlibrary loans which they processed from December, 1975 through November, 1976. (We refer to these as 1976 data). These data were used to correct national data for seasonal and day-of-the-week effects. They were also used to develop mathematical models for estimation of distributions of photocopying by serial titles. Finally, they provided an excellent means of verifying results of photocopying of interlibrary loans observed in the national library survey.

4.2 Estimated Volume of Photocopying of Serials for Interlibrary Loan

One portion of library photocopying that has received particular attention is the photocopying done by one library for another library outside its organization (interlibrary loan). The substitution of photocopies for the lending of the original publication is common practice in the case of serials. For the year 1976, it is estimated from the national library survey that a total of 5.9 million photocopy items of serials were made by United States libraries for interlibrary loans to other libraries. The libraries in the national survey also reported receiving about 6 million borrowed requests. Approximately three-fourths of the photocopies were of identified copyrighted

materials. Serials accounted for about 60 percent of all photocopies made for interlibrary loan. Palmour et al, found, in 1971, that photocopies accounted for about 42 percent of all interlibrary loans made by Academic libraries (7). The same study estimated that 95 percent of the photocopying for interlibrary loans involved serials materials. This evidence suggests that other libraries may be lending a higher proportion of books and other materials.

The proportion of photocopying for interlibrary loans of copyrighted serials is displayed by type of library in Figure 4.3.

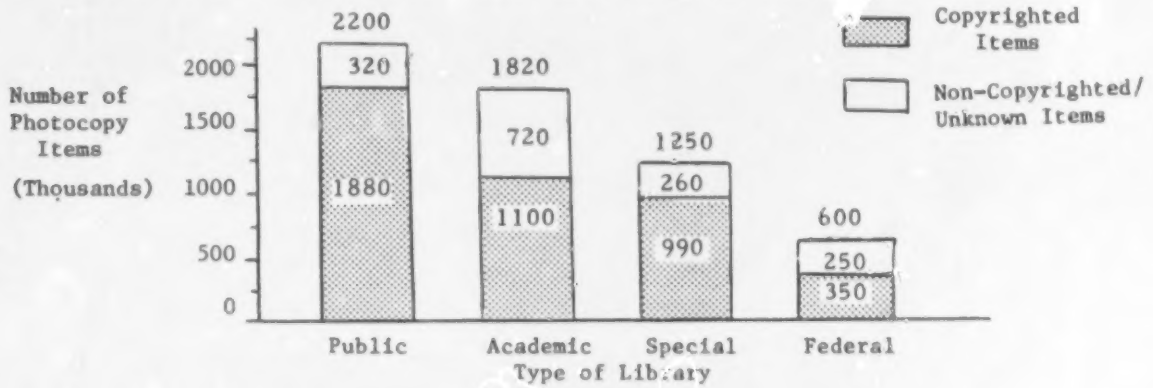


Figure 4.3 Number of Photocopy Items of Serials for Interlibrary Loans by Type of Library (1976)

The largest amount of photocopying for interlibrary loans is in Public and Academic libraries at 2.2 and 1.8 million photocopy items respectively. Special libraries had about 1.3 million and Federal libraries 600 thousand photocopy items respectively. The Association of Research Libraries (ARL) reported that the libraries of their member institutions provided about 1.7 million photocopies to other libraries through interlibrary loan in the year 1975-76 (1). This suggests that a large portion of the photocopying for interlibrary loans comes from large Academic libraries. Many of the ARL libraries were included in the national library survey.

The number of photocopy items of copyrighted serials is given by the type of libraries in Table 4.5.

TABLE 4.5 NUMBER OF PHOTOCOPY ITEMS OF SERIALS FOR INTERLIBRARY LOANS, COPYRIGHTED AND NOT COPYRIGHTED, BY TYPE OF LIBRARY (1976)

(Thousands of Photocopy Items)

Type of Library	All Serials	Copyrighted	Not Copyrighted	Unknown
Public	2,200	1,880	180	140
Academic	1,820	1,100	460	260
Special	1,250	990	50	210
Federal	600	350	190	60
All Libraries	5,870	4,320	880	670

SOURCE: King Research, Inc.: National Library Survey

The total numbers of photocopy items of copyrighted serials that are given in Table 4.5 are not those used in most of the analysis in the remainder of this section. These data are compared with the number of photocopy items borrowed since the CONTU guidelines indicate that responsibility for royalty payment is with the borrowing library. As a matter of interest, the average numbers of photocopy items lent are given in Table 4.6.

TABLE 4.6 ESTIMATED AVERAGE NUMBER OF PHOTOCOPIED INTERLIBRARY LOANS OF SERIALS BY WHETHER THEY ARE COPYRIGHTED, BY TYPE OF LIBRARY (1976)

(Average Number of Photocopy Items Per Library)

Type of Library	All Serials	Copyrighted	Not Copyrighted	Unknown
Public	260	230	20	4
Academic	600	360	150	90
Special	150	120	10	20
Federal	420	240	130	40
All Libraries	280	200	40	30

SOURCE: King Research, Inc.: National Library Survey

Academic and Special libraries lend similar amounts of copyrighted photocopy items (360 and 116 respectively). Also, the average amount lent by Public and Federal libraries is similar (230 and 240 respectively). Even though the estimated and average total numbers of photocopy items for interlibrary loans are high, the rules under the CONTU guidelines reduce the total number of photocopies subject to royalty payment to a small fraction of the total. The CONTU guidelines are discussed first in section 4.2.1, the distinction is made between photocopies loaned and borrowed in section 4.2.2, and the estimated total number of photocopy items made for interlibrary loans and the impact of CONTU guidelines are provided in section 4.2.3.

4.2.1 CONTU Guidelines Concerning Interlibrary Borrowing of Serials

Section 108 of the new Copyright Law, effective January 1, 1978, prohibits systematic photocopying of copyrighted materials but permits interlibrary arrangements "that do not have, as their purpose or effect, that the library or archives receiving such copies or phonorecords for distribution does so in such aggregate quantities as to substitute for a subscription to or purchase of such work." The National Commission on New Technological Uses of Copyrighted Works (CONTU) consulted with the principal library, publisher, and author organizations to reach a workable and fair interpretation of the term "such aggregate quantities." Agreement was reached and resulted in what are now referred to as the CONTU Guidelines.

The CONTU Guidelines place the burden of responsibility upon the borrowing library. Because of their importance, the Guidelines are repeated in full text.

Guidelines for the Proviso of Subsection 108(g)(2)

1. As used in the proviso of subsection 108(g)(2), the words "...such aggregate quantities as to substitute for a subscription to or purchase of such work" shall mean:

(a) with respect to any given periodical (as opposed to any given issue of a periodical), filled requests of a library or archives (a "requesting entity") within any calendar year for a

total of six or more copies of an article or articles published in such periodical within 5 years prior to the date of the request. These guidelines specifically shall not apply, directly or indirectly, to any request of a requesting entity for a copy or copies of an article or articles published in any issue of a periodical, the publication date of which is more than 5 years prior to the date when the request is made. These guidelines do not define the meaning, with respect to such a request, of "...such aggregate quantities as to substitute for a subscription to (such periodical)".

(b) with respect to any other material described in subsection 108(d), (including fiction and poetry), filled requests of a requesting entity within any calendar year for a total of six or more copies or phonorecords of or from any given work (including a collective work) during the entire period when such material shall be protected by copyright.

2. In the event that a requesting entity --

(a) shall have in force or shall have entered an order for a subscription to a periodical, or

(b) has within its collection, or shall have entered an order for, a copy of phonorecord of any other copyrighted work, material from either category of which it desires to obtain by copy from another library or archives (the "supplying entity"), because the material to be copied is not reasonably available for use by the requesting entity itself, then the fulfillment of such request shall be treated as though the requesting entity made such copy from its own collection. A library or archives may request a copy or phonorecord from a supplying entity only under those circumstances where the requesting entity would have been able, under the other provisions of Section 108, to supply such copy from materials in its own collection.

3. No request for a copy or phonorecord of any material to which these guidelines apply may be fulfilled by the supplying entity unless such request is accompanied by a representation by the requesting entity that the request was made in conformity with these guidelines.

4. The requesting entity shall maintain records of all requests made by it for copies or phonorecords of any materials to which these guidelines apply and shall maintain records of the

fulfillment of such requests, which records shall be retained until the end of the third complete calendar year after the end of the calendar year in which the respective request shall have been made.

5. As part of the review provided for in subsection 108(i), these guidelines shall be reviewed not later than 5 years from the effective date of this bill.

Part of the national library survey on photocopying was devoted to the collection of data on interlibrary loan borrowing requests for serials made by the sample libraries. All estimates in this section were derived from the borrowing data, in contrast to estimates in previous sections on interlibrary loans made to other libraries.

4.2.2 Estimated Volume of Photocopying of Interlibrary Loans Versus Interlibrary Requests.

It is important to make a distinction between interlibrary loans (lending library photocopying) and interlibrary requests (borrowing library use) since the CONTU guidelines indicate that the borrowing libraries might be responsible for royalty payments for photocopies of interlibrary loans of serials that are photocopied. The previous section gave an estimate of interlibrary loans by whether they were copyrighted. Unfortunately, borrowing data from the interlibrary loan form is not broken down by copyrighted or not copyrighted because borrowing forms do not contain this information.

The relationship between interlibrary loans and interlibrary requesting is given by type of library in Table 4.7

TABLE 4.7 NUMBER OF PHOTOCOPY ITEMS OF SERIALS LENT AND BORROWED BY TYPE OF LIBRARY (1976)

(Thousands of Photocopy Items)

Type of Library	Photocopy Items Lent	Photocopy Items Borrowed	Net Photocopies Lent*
Public	2,200	1,340	+ 860
Academic	1,820	2,060	- 240
Special	1,250	1,800	- 550
Federal	600	830	- 230
All Libraries	5,870	6,030	- 160

SOURCE: King Research, Inc.: National Library Survey

* These data present some evidence of the balance of lending and borrowing. However, much of the difference observed can be accounted for by statistical variation.

It appears that Public libraries lend more than they borrow by a total of about 860 thousand photocopy items. On the other hand, the Academic, Special and Federal libraries together borrowed about 1 million more copies than they lent. The net effect is that there are about 160,000 more borrowing requests than loans from the 21,280 libraries included in the sampling universe.

The average number of photocopy items of serials lent and borrowed from other libraries is given in Table 4.8 below.

TABLE 4.8 NUMBER OF PHOTOCOPY ITEMS OF SERIALS PER LIBRARY LENT AND BORROWED BY TYPE OF LIBRARY (1976)

(Average Number of Photocopy Items Per Library)

Type of Library	Photocopy Items Lent	Photocopy Items Borrowed	Net Photocopy Items Lent
Public	260	160	+ 100
Academic	600	680	- 80
Special	150	210	- 60
Federal	420	580	- 160
All Libraries	280	280	- 7

SOURCE: King Research Inc.: National Library Survey

There is an average net excess of loans for Public libraries. Academic, Special and Federal libraries all tend to borrow more than they lend. The next table shows, however, that most of the Academic borrowing is from other Academic libraries.

The number of photocopy items requested that were indicated to be from various types of libraries are given in Table 4.9.

TABLE 4.9 NUMBER OF PHOTOCOPY ITEMS OF SERIALS MADE FOR INTERLIBRARY LOAN BY TYPE OF LENDING LIBRARY AND BY TYPE OF BORROWING LIBRARY (1976)

(Thousands of Photocopy Items)

Type of Borrowing Library	All Libraries	Type of Lending Library					
		Academic	Federal	Public	School	Special	Unknown
Public	1,340	470	0	450	10	60	350
Academic	2,060	1,360	60	60	0	190	390
Special	1,800	430	450	50		620	250
Federal	830	300	140	30	--	230	130
All Libraries	6,030	2,560	650	590	10	1,100	1,120

SOURCE: King Research, Inc.: National Library Survey

Unfortunately, a large proportion of the responses indicated that the lending source was unknown or was not recorded on the form. For the most part, results show that Public libraries borrow mostly from Public and Academic libraries (450 and 470 thousand photocopy items respectively); most Academic libraries borrow from Academic libraries; Special libraries borrow heavily from Special libraries, Federal and Academic libraries; and Federal libraries borrow mostly from Academic and Special libraries. The data seem to corroborate data from Table 4.7 and 4.8.

The remainder of this section is devoted to interlibrary borrowing requests. Data came from the national library survey interlibrary loan form and the MINITEX data base. From the national library survey data, it is estimated that there are about 6 million borrowing requests, of which about 4.3 million are requests for domestic publications. Of these, a total of 3.8 million had photocopies made. The remaining were reported to be filled by original serial copies or to be unfilled. These data are given by type of borrowing library in Table 4.10.

TABLE 4.10 NUMBER OF PHOTOCOPY ITEMS OF SERIALS REQUESTED FOR INTERLIBRARY LOAN BY TYPE OF BORROWING LIBRARY (1976) (MILLIONS OF PHOTOCOPY ITEMS)

Type of Borrowing Library	Number of Borrowing Requests	Number of Domestic Requests	Number of Domestic Photocopy Items	Number of Copyrighted Domestic Photocopy Items
Public	1.34	1.18	1.01	0.91
Academic	2.06	1.28	1.13	0.83
Special	1.80	1.35	1.25	1.14
Federal	0.83	0.52	0.38	0.23
All Libraries	6.03	4.33	3.77	3.11

SOURCE: King Research, Inc.: National Library Survey

The number of copyrighted photocopy items was found from the proportion of copyrighted loaned photocopy items to the total of copyrighted and not copyrighted found in Table 3.15. The values were 0.905 for Public, 0.733 for Academic, 0.909 for Special and 0.600 for Federal libraries. The Academic libraries seemed to have a higher proportion of borrowed photocopies from foreign serials than did other types of libraries. The total number of requests for photocopies of domestic serials is given in Table 4.10 and the average number of interlibrary loan photocopied requests per library is given in Table 4.11.

TABLE 4.11 NUMBER OF PHOTOCOPY ITEMS PER LIBRARY OF SERIALS MADE FOR INTERLIBRARY LOANS BY TYPE OF BORROWING LIBRARY (1976) (AVERAGE NUMBER OF PHOTOCOPY ITEMS PER LIBRARY)

Type of Borrowing Library	Number of Borrowing Requests Per Library	Number of Domestic Requests Per Library	Number of Domestic Photocopy Items Per Library	Average Number of Domestic Copyrighted Photocopy Items Per Library
Public	160	140	120	110
Academic	680	420	370	270
Special	210	160	150	140
Federal	580	360	270	160
All Libraries	280	200	180	150

SOURCE: King Research, Inc.: National Library Survey

The average number of photocopy items made from copyrighted domestic serials per library is highest in Academic libraries (270) and lowest in Public libraries (110). It is cautioned that the results involve only copyrighted domestic serials. Libraries should recognize that they may have a liability for copyrighted foreign serials as well.

The total and average number of photocopy items for interlibrary loan requests are given in Tables 4.12 and 4.13.

TABLE 4.12 NUMBER OF PHOTOCOPY ITEMS OF SERIALS REQUESTED FOR INTERLIBRARY LOAN BY TYPE OF REQUESTOR, BY TYPE OF BORROWING LIBRARY (1976)

(Thousands of Photocopy Items)

Type of Borrowing Library	All Requestors*	Type of Requestor					
		Teacher	Student	Individual	Library	Other Institution	Not Specified
Public	1,340	10	440	460	210	200	20
Academic	2,080	780	1,040	30	170	50	10
Special	1,810	170	100	1,270	140	80	50
Federal	814	100	20	690	3	1	0
All Libraries	6,044	1,070	1,600	2,450	530	320	80

SOURCE: King Research, Inc.: National Library Survey

TABLE 4.13 NUMBER OF PHOTOCOPY ITEMS PER LIBRARY OF SERIALS REQUESTED FOR INTERLIBRARY LOAN BY TYPE OF REQUESTOR, BY TYPE OF BORROWING LIBRARY (1976) (AVERAGE NUMBER OF PHOTOCOPY ITEMS PER LIBRARY)

Type of Borrowing Library	All Requestors**	Type of Requestor					
		Teacher	Student	Individual	Library	Other Institution	Not Specified
Public	162	2	53	55	26	24	2
Academic	686	256	343	10	57	15	5
Special	211	20	12	149	16	9	5
Federal	576	76	15	483	2	-	-
All Libraries	285	50	76	115	25	15	4

SOURCE: King Research, Inc.: National Library Survey

* Totals do not agree with Table 4.10 due to rounding.

** Averages do not agree with Table 4.11 due to rounding.

It is found, as expected, that Academic libraries are serving teachers and students much more frequently than other types of libraries. Teachers also rely on Special libraries and Federal libraries to a fair degree. About one-fourth of the students' requests are processed through Public libraries and nearly all the rest come from Academic libraries.

4.2.3 CONTU Guidelines and Interlibrary Loan

Of the 3.77 million interlibrary loan photocopy items of domestic serials, a substantial proportion are not subject to royalty payment based on CONTU guidelines for interlibrary loans. One way to display this fact is by sequentially screening out photocopy items by those publications over five years old, those used for replacement or classroom use and the number of photocopy items less than six copies per serial title made in the past year within an individual borrowing library. These data are given in Figure 4.4.

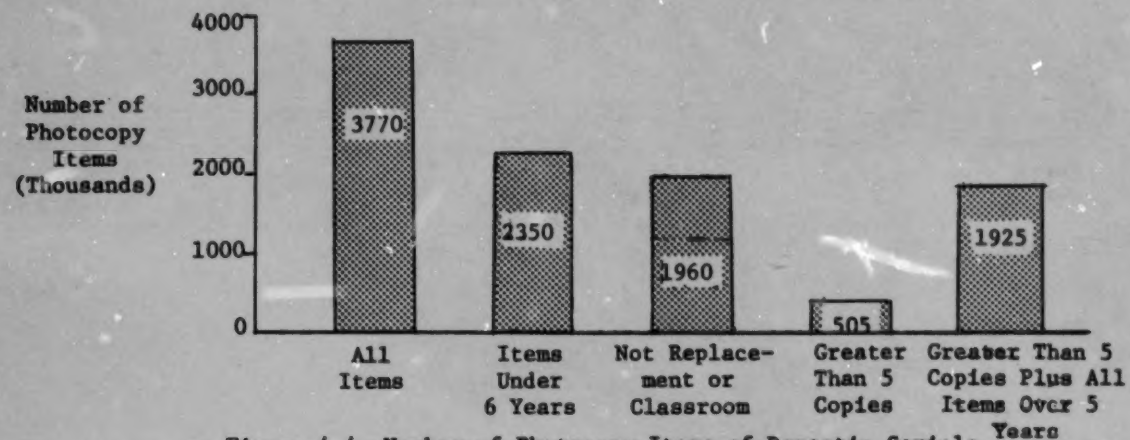


Figure 4.4 Number of Photocopy Items of Domestic Serials Requested for Interlibrary Loans-All Items, Items Under 6 Years, Items Not for Replacement or Classroom, Items With Greater Than Five Copies (1976)

The total annual number of photocopy items drops from 3.77 million to 2.4 million when publications over five years old are dropped from consideration. Of these, about 2.0 million photocopy items remain after replacement copies and copies made for classroom use are dropped from consideration. Thus, roughly one-half of the original photocopies are exempt after these aspects of the CONTU guidelines and fair use doctrine are applied. When the five and

under rule applies, it is estimated that the number of eligible photocopy items decrease to about 505 thousand.

The most difficult observation involves the number of photocopy items which are not eligible for royalty payment because fewer than six copies of them are made in a library within a one-year period of time. A rather complex mathematical model was used to make this estimate. The difficulty in making this estimate comes from the fact that observations of photocopy items were made not only from a sample of libraries but also from a sample of time in the year. One can project quite well the estimate of total volume of photocopying but the estimate of the proportion (distribution) of serials that has 1, 2, 3, 4, 5 or greater photocopy items is quite difficult. If one observes that 95 percent of the serials had less than six photocopies in one week, there are found to be fewer serials that will have less than six photocopies over the entire year. The data from the MINITEX files were extremely useful in formulating an estimate for this figure. This was done by observing the mathematical distribution of photocopies for one week and one year for all libraries and serial titles in MINITEX. From these data an extrapolation factor was derived for each type of library. A detailed discussion of this approach is given in Appendix C. This approach yields a very small proportion of photocopies that are subject to royalty payments under the conditions mentioned above when the serials with five or less photocopies are made and, when the first five copies of the remaining titles are excluded.

Table 4.14 gives the eligible photocopy items by type of library. It is noted that the number of exemptions for classroom use is much higher in Academic and Public libraries than in the others. We find also that only 13 percent of the total domestic photocopy items are subject to royalty payments after the exemptions are applied. This proportion ranges from 9 percent in Public libraries up to 18 percent in Special libraries. This proportion of serial titles involved is discussed in Section 5.

TABLE 4.14 NUMBER OF PHOTOCOPY ITEMS OF DOMESTIC SERIALS REQUESTED FOR INTERLIBRARY LOAN THAT ARE UNDER SIX YEARS OLD, NOT FOR REPLACEMENT OR CLASSROOM USE, AND GREATER THAN FIVE COPIES BY TYPE OF BORROWING LIBRARY (1976)

(Thousands of Photocopy Items)

Type of Borrowing Library	All Domestic Photocopy Items	and*	Serial Characteristic: Publication Under Six Years	and*	Not for Replacement or Classroom use	and*	Greater Than Five Copies	Proportion of Total
Public	1,010		620		440		90	0.09
Academic	1,130		610		430		140	0.12
Special	1,250		850		830		220	0.18
Federal	380		270		260		55	0.14
Total	3,770		2,350		1,960		505	0.13

*Includes only serials observed in previous column. Thus, each column total is a sub-set of the previous column total.

SOURCE: King Research, Inc.: National Library Survey

A similar analysis was performed on MINITEX data for an entire year from 132 of their Public, Academic and Special libraries. Age is given first, and is followed by the other exemptions. These data are presented in Table 4.15.

TABLE 4.15 COMPARISON OF RESULTS OF PHOTOCOPY ITEMS OF DOMESTIC SERIALS REQUESTED FOR INTERLIBRARY LOAN FROM NATIONAL LIBRARY SURVEY AND MINITEX DATA BASE (1976)

Type of Borrowing Library	No. of Domestic Photocopy Items Borrowed Per Library		Prop. of Serials Under Six Years		No. of Eligible Photocopy Items Per Library		Prop. of Photocopy Items Eligible	
	Survey	MINITEX	Survey	MINITEX	Survey	MINITEX	Survey	MINITEX
Public	120	138	.50	.51	10.8	4.8	0.09	.04
Academic	370	629	.60	.53	46.2	34.7	0.12	.06
Special	150	150	.62	.69	25.6	15.0	0.18	.10

SOURCE: King Research, Inc.: National Library Survey
MINITEX Data Base

The comparisons can be made with national library survey data as follows. In Public libraries, the average number of domestic photocopy items borrowed is quite similar for the national library survey data (120) and the MINITEX data base (138), the proportion of serials under six years old is almost identical, and the average number of eligible photocopy items per library was estimated to be 11 in the national library survey and about 5 in the MINITEX data base. The proportion of photocopy items subject to royalty payment was estimated to be 9 percent in the national library survey and 4 percent from the MINITEX data base. The average number of domestic photocopy items is different only for Academic libraries, where the average number of photocopy items is estimated to be higher in the national library survey. The proportion of photocopy items from publications less than six years old is within ten percent for all types of libraries. The national library survey estimate of eligible photocopies per library seems to be somewhat higher than the MINITEX data base average, but not too far off. This is reflected in the proportion of eligible photocopy items given in the last column where the proportion for the national library survey data is larger than for the MINITEX data base. The data from MINITEX seem to provide good evidence to support the national library survey data for estimates of the number of photocopy items made in request of interlibrary loans.

One hypothetical condition of eligibility subject to question has to do with the disposition of photocopy items made from publications over five years old. One view is that all these photocopy items are eligible except those exempt under fair use. Thus the five copy rule would not apply. One argument is that, if this were not true, there would be an implication that the copyright has a five year duration. If this eligibility condition exists, the total number of photocopy items subject to royalty payment would be as follows:

Type of Library	No. of Eligible Photocopy Items
Public	480,000
Academic	660,000
Special	620,000
Federal	165,000
All Libraries	1,925,000

Thus, if this condition of eligibility is valid, the number of photocopy items subject to royalty payment would increase from 505 thousand to 1.9 million, or nearly a four-fold increase. (This assumes, of course, that none of these older extra photocopy items fall into the fair use category.)

TABLE 4.16 NUMBER OF PHOTOCOPY ITEMS OF DOMESTIC SERIALS REQUESTED FOR INTERLIBRARY LOAN THAT ARE OVER FIVE YEARS OLD, LESS THAN SIX COPIES, CURRENT SUBSCRIBER REPLACEMENT COPY AND FACULTY/CLASSROOM BY TYPE OF LIBRARY--MINITEX, 1976

Type of Borrowing Library	Total Photocopies	Over Five Years Old		Less Than Six Copies		Current Subscriber		Replacement Copy		Faculty/ Classroom	
		Tot.	Prop.	Tot.	Prop.	Tot.	Prop.	Tot.	Prop.	Tot.	Prop.
Public	3,582	1,755	.49	640	.18	316	.09	11	.003	153	.04
Academic	42,122	19,758	.47	12,917	.31	5,675	.13	140	.003	2,157	.05
Special	5,715	1,792	.31	1,644	.29	279	.05	0	0	41	.01
All Libraries	51,419	23,305	.45	15,201	.30	6,270	.12	151	.002	2,351	.05

SOURCE: King Research, Inc.: MINITEX Data Base

The largest number of exemptions came from the age rule, then, in order, five copies or less per serial, current subscriber, classroom use and replacement copy. It is noted that the total number of exemptions is less than the sum of those given in Table 4.16 since many exemptions are common to a given photocopy item.

4.2.4 Distribution of Photocopy Items Made By Libraries for Interlibrary Loan

From the perspective of libraries, one important question concerns the proportion of libraries that will not have any photocopy items that are subject to royalty payments. One source of evidence to answer this question is from the MINITEX data base. These data are given in Table 4.17 with serials over five years excluded. Of the 132 libraries, only 58 have photocopy items that are subject to royalty payments. These 58 libraries have a total of 3,057 photocopy items of domestic serials that are subject to royalty payments for an average of about 53 photocopy items each. The average number of serials involved per library is ten which yields about five photocopy items each that are subject to royalty payments. Results for the number of eligible photocopy items summed across libraries are given in Section 5. It appears that only a moderate number of journals are eligible for royalty payment for photocopying interlibrary requests. Furthermore, less than one-half of the libraries that MINITEX serves have any interlibrary photocopy items that are subject to royalty payments, and these libraries average only 53 eligible photocopy items per library.

TABLE 4.17 NUMBER OF LIBRARIES WITH ALL ROYALTY EXEMPTIONS NOT INCLUDED-MINITEX (1976)

Type of Borrowing Library	No. of Libraries	No. of Libraries (All Ex.)	Prop. of Libraries (All Ex.)	No. of Photocopy Items (All Ex.)	Photocopy Items Per Library*	No. of Serials (All Ex.)	Serials Per Library*	Photocopy Items Per Library Per Serial*
Public	26	12	.46	126	10.5	27	2.3	4.6
Academic	68	34	.50	2,360	69.4	464	13.6	5.1
Special	38	12	.32	571	47.6	87	7.3	6.6
All Libraries	132	58	.44	3,057	52.7	578	10.0	5.3

SOURCE: King Research, Inc.: MINITEX Data Base

*Average based on libraries that are eligible for any royalty payment.

The proportion of libraries that photocopy at various levels are given below for different conditions of eligibility. These data are for national estimates.

TABLE 4.18 PROPORTION OF LIBRARIES THAT HAVE VARIOUS LEVELS OF PHOTOCOPY ITEMS BY THREE CONDITIONS OF ELIGIBILITY (1976)

(Proportion of Libraries)

Serial Characteristics	Number of Eligible Photocopy Items			
	0 - 250	251 - 500	501 - 1,000	>1,000
All Domestic Photocopy Items	0.81	0.10	0.05	0.04
Publication <Six Years	0.93	0.04	0.02	0.02
Not for Replacement/ Classroom Use	0.93	0.03	0.01	0.02

SOURCE: King Research, Inc.: National Library Survey

Thus, when all domestic photocopy items are considered, about 81 percent of the libraries will have less than 250 photocopy items and 4 percent of the libraries will have more than 1,000. When the five and under rule is applied, the proportions will shift substantially to the left. If the eligibility condition concerning photocopy items is valid, the picture would be closer to the one with all domestic photocopy items since the fair use eligibility criteria are not too very restrictive.

Table 4.18 does not show the dramatic picture portrayed by the large proportion of photocopy items made for interlibrary loan for a small proportion of libraries. This picture is presented in Figure 4.5 on the next page.

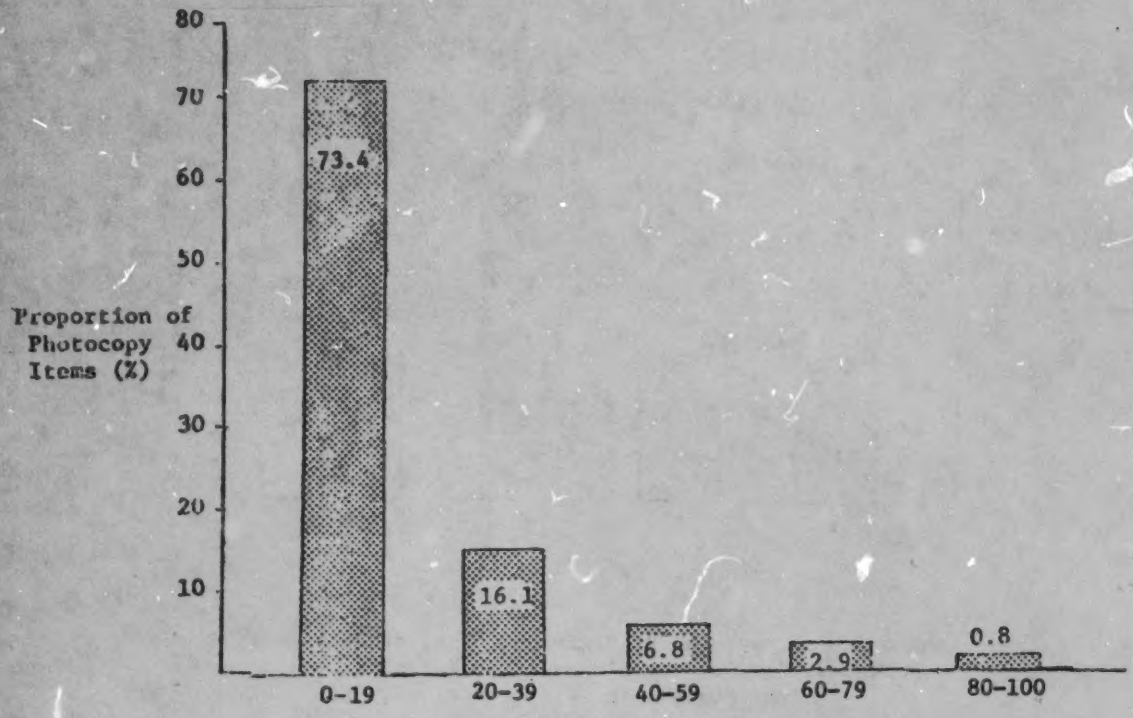


Figure 4.5 Distribution of Interlibrary Loan Photocopy Items by Proportion of Libraries (1976)

Figure 4.5 shows that 73.4 percent of the photocopy items for interlibrary loan are prepared for 20 percent of the libraries, when all libraries are included. One-half of the libraries request only about seven percent of the interlibrary loans and the other half requests 93 percent of the loans.

Also of interest is the distribution of the number of pages in each photocopy transaction. These data are displayed in Figure 4.6, and show that 16 percent of the transactions are 1 page, 13 percent 2 pages, 52 percent 3-10 pages, and 20 percent over 10 pages.

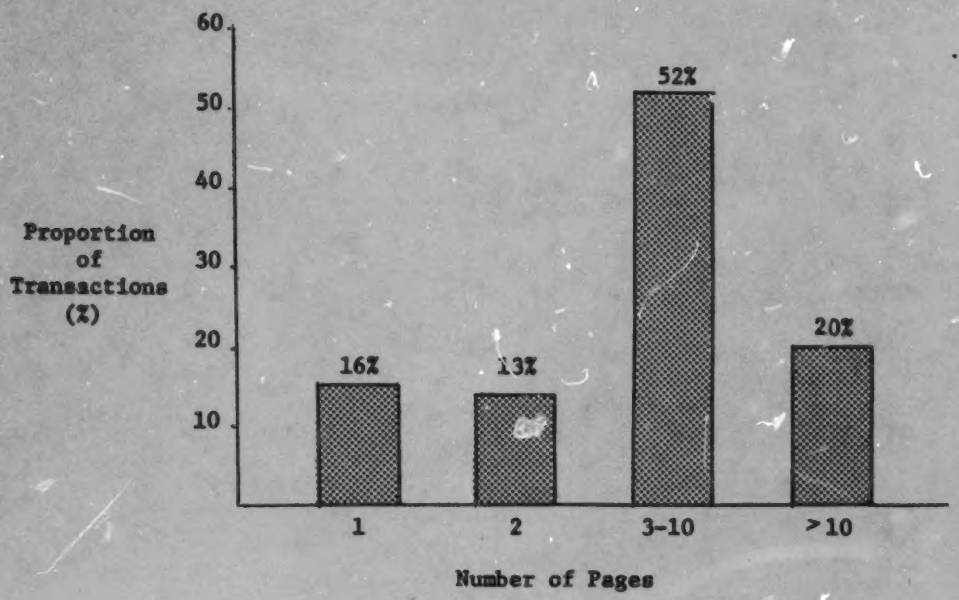


Figure 4.6 Proportion of Number of Pages of Photocopy Transactions of Serials Made for Interlibrary Loan Request for All Libraries

4.3 Estimated Volume of Photocopying of Serials for Local Users

The photocopying of serials by library staff for local users comprises the largest volume among the three types of transactions. In fact, it is estimated that about 27.8 million such photocopy items are made in a year. Of these, about 78 percent are copyrighted, 16 percent are not copyrighted and copyright status is unknown or not reported for six percent of the transaction responses. These data are given in Table 4.19, and the average number per library is given in Table 4.20.

Table 4.19 NUMBER OF PHOTOCOPY ITEMS OF SERIALS FOR LOCAL USERS COPYRIGHTED AND NOT COPYRIGHTED, BY TYPE OF LIBRARY (1976)

(Thousands of Photocopy Items)

Type of Library	All Serials	Copyrighted	Not Copyrighted	Unknown
Public	9,010	7,560	900	550
Academic	2,530	2,020	340	170
Special	12,280	9,670	1,790	820
Federal	4,020	2,470	1,960	90
All Libraries	27,840	21,720	4,490	1,630

SOURCE: King Research, Inc.: National Library Survey

Table 4.20 NUMBER OF PHOTOCOPY ITEMS PER LIBRARY OF SERIALS FOR LOCAL USERS COPYRIGHTED AND NOT COPYRIGHTED, BY TYPE OF LIBRARY (1976)

(Average Number of Photocopy Items Per Library)

Type of Library	All Serials	Copyrighted	Not Copyrighted	Unknown
Public	1,100	900	100	100
Academic	800	700	100	100
Special	1,400	1,100	200	100
Federal	2,800	1,700	1,000	100
All Libraries	1,300	1,000	200	100

SOURCE: King Research, Inc.: National Library Survey

The pattern of copyrighted serials over all sources seems to hold for photocopying for local users.

The largest volume of serial photocopy items for local users occurs for Special libraries, with approximately 12.3 million local user photocopy items. Next are Public libraries with 9 million, trailed by Federal and Academic libraries. Public libraries photocopy the largest proportion of copyrighted serials for users (84%) while Federal libraries have the lowest proportion (61%).

The estimated number of photocopy items of domestic and foreign serials for local users is given in Table 4.21.

Table 4.21 NUMBER OF PHOTOCOPY ITEMS OF COPYRIGHTED SERIALS FOR LOCAL USERS BY DOMESTIC AND FOREIGN PUBLISHERS, BY TYPE OF LIBRARY (1976)

(Thousands of Photocopy Items)

		Type of Publisher		
Type of Library	All Publishers	Domestic	Foreign	Unknown
Public	7,560	7,383	125	52
Academic	2,020	1,758	258	4
Special	9,670	7,933	1,698	39
Federal	2,470	1,958	511	0.7
All Libraries	21,720	19,032	2,592	96

SOURCE: King Research, Inc.: National Library Survey

The proportion of photocopying of foreign published materials is slightly more than ten percent. This proportion is highest in Federal libraries (21%) and lowest in Public libraries (2%). The average number of foreign serials photocopied in libraries for local users is given in Table 4.22.

Table 4.22 NUMBER OF PHOTOCOPY ITEMS OF COPYRIGHTED SERIALS FOR LOCAL USERS BY DOMESTIC AND FOREIGN PUBLISHERS, BY TYPE OF LIBRARY (1976)

(Average Number of Photocopy Items Per Library)

		Type of Publisher		
Type of Library	All Publishers	Domestic	Foreign	Unknown
Public	900	890	15	6
Academic	700	580	86	1
Special	1,100	930	201	5
Federal	1,700	1,370	357	.5
All Libraries	1,000	890	122	5

SOURCE: King Research, Inc.: National Library Survey

The number is appreciably high in any type of library, ranging from 15 photocopy items per library in Public libraries to 357 in Federal libraries.

Several conditions of eligibility for royalty payment are discussed in the remainder of this section. These conditions include characteristics of photocopying that are described by fair use, as well as classroom use by faculty, and application of guidelines similar to those suggested by CONTU for interlibrary loans. The following section discusses the effect of these conditions and presents results for domestic and copyrighted serials. One problem is to determine how many of the items photocopied for local users are for either replacement use by libraries or classroom use for faculty. Of the 21.7 million domestic, copyrighted serial photocopy items, replacement or classroom status of about twenty percent was not known or was unreported. Of the remaining photocopy items, however, less than one percent was for replacement by libraries and about five percent was for classroom use by faculty. The rest were classified as "other" responses. The breakdown of this result by type of library is given in Table 4.23 for total photocopy items.

Table 4.23 TOTAL NUMBER OF PHOTOCOPY ITEMS OF COPYRIGHTED SERIALS FOR LOCAL USERS BY PURPOSE OF REQUEST, BY TYPE OF LIBRARY (1976)

(Thousands of Photocopy Items)

Type of Library	All Purposes	Purpose of Request				
		Replacement by Library	Classroom Use by Faculty	Other	Unknown	Unreported
Public	7,560	73	325	4,747	1,540	875
Academic	2,020	8	220	1,139	458	195
Special	9,670	10	88	8,993	150	429
Federal	2,470	41	40	1,521	237	672
All Libraries	21,720	91	673	16,400	2,385	2,171

SOURCE: King Research, Inc.: National Library Survey

The greatest amount of replacement is found in Public libraries (73,000) and Special libraries (10,000). The Public and Academic libraries account for most of the volume of photocopying performed for classroom use by faculty as local users (325 and 220 thousand, respectively). Not surprisingly, Academic libraries report the largest proportion of local user photocopy items with "classroom use by faculty" as purpose of request (11%). If such classes of local user photocopying were exempt from payment, the effects would appear to be minimal.

Average local user photocopy items per library are shown in Table 4.23. This table expecially points out the large proportion of "other" local user photocopying (75.5%) which, on the average, occurs in U.S. libraries.

The average amount of photocopying per library (shown in Table 4.24) follows the pattern in total volume, except that Academic libraries average 73 photocopy items for faculty classroom use and Public libraries average 39 photocopy items in this same category. Not surprisingly, Special libraries average the smallest number (10) of photocopy items for local user classroom use by faculty.

Table 4.24 NUMBER OF PHOTOCOPY ITEMS OF COPYRIGHTED SERIALS FOR LOCAL USERS BY PURPOSE OF REQUEST, BY TYPE OF LIBRARY (1976)

Type of Library	All Purposes*	Purpose of Request				
		Replacement of Library	Classroom Use by Faculty	Other	Unknown	Unreported
Public	909	9	39	571	185	105
Academic	667	3	73	376	151	64
Special	1,136	1	10	1,057	18	50
Federal	1,729	1	28	1,064	166	470
All Libraries	1,021	4	32	771	112	102

SOURCE: King Research, Inc.: National Library Survey

*Averages, All Purposes, do not agree with Table 4.22 due to rounding.

It is possible that single photocopy items made for individuals are eligible for royalty payment for photocopy items made for local use. One way to distinguish these photocopy items is to display the distribution of photocopy items by use: for local patrons (individuals and institutions) or for internal library staff use. These data are given in Table 4.25 on the next page, which may be read as follows. In Public libraries, 4.36 million transactions for patrons involved a single photocopy item, 200 thousand transactions involved two photocopy items, 160 thousand transactions involved between three and ten photocopy, and 20 thousand transactions involved over ten photocopy items. If one does not include any unknown (or unreported) exposures and assumes they are the same as those reported, we have the number of photocopy items that have single copies made for local patrons given in Table 4.26.

Table 4.25 DISTRIBUTION OF NUMBER OF TRANSACTIONS OF SERIALS MADE FOR LOCAL USERS BY TYPE OF USER, BY TYPE OF LIBRARY (1976)

(Thousands of Transactions)

Type of Library	Type of User	Number of Photocopy Items					
		1	2	3-10	>10	Unknown	All Photocopy Items*
Public	Patron	3,310	60	80	0	50	3,500
	Staff	660	60	60	10	70	850
	Unknown	390	80	20	10	0	500
	All Users	4,360	200	160	20	120	4,850
Academic	Patron	1,320	30	10	0	10	1,370
	Staff	100	10	20	0	0	130
	Unknown	110	10	10	0	20	150
	All Users	1,530	50	40	0	30	1,650
Special (Profit)	Patron	4,070	480	20	30	40	4,640
	Staff	640	0	20	0	0	660
	Unknown	210	0	0	0	0	210
	All Users	4,920	480	40	30	40	5,510
Special (Non-Profit)	Patron	3,430	50	50	0	20	3,550
	Staff	80	0	0	10	0	90
	Unknown	100	10	0	10	10	130
	All Users	3,610	60	50	20	30	3,770
Federal	Patron	400	110	20	10	90	630
	Staff	60	20	10	0	0	90
	Unknown	420	50	0	0	0	470
	All Users	880	180	30	10	90	1,190
All Libraries	Patron	12,530	730	180	40	210	13,690
	Staff	1,540	90	110	20	70	1,830
	Unknown	1,230	150	30	20	30	1,460
	All Users	15,300	970	320	80	30	16,980

*Total transactions do not necessarily reflect number of photocopy items since transactions are estimated only from characteristic forms. Photocopy items are estimated from volume logs and characteristic forms.

SOURCE: King Research, Inc.: National Library Survey

Table 4.26 NUMBER OF SINGLE COPY TRANSACTIONS OF SERIALS FOR LOCAL USERS, BY TYPE OF LIBRARY (1976)

Type of Library	Total Number of Transactions (000)	Reported Single Copy Transactions for Local Users (000)	Estimated Total Single Copy Transactions For Local Users (000)
Public Libraries	4,850	3,310	3,800
Academic Libraries	1,650	1,320	1,460
Special Libraries - Profit	5,510	4,070	4,260
Special Libraries - Non-Profit	3,770	3,430	3,570
Federal Libraries	1,190	400	760
All Libraries	16,980	12,530	13,850

SOURCE: King Research, Inc.: National Library Survey

In this instance the number of transactions equal the number of photocopy items, so that the values in Table 4.26 can be used as an estimate of the number of photocopy items involved in this condition of royalty payment eligibility.

Another hypothetical condition of eligibility in this category concerns photocopy items from publications over five years old. Here it is found that a smaller proportion of publications are photocopied than with interlibrary loan where about 40 percent of the photocopies are found to be exempt due to the CONTU interlibrary loan rule. The proportion of photocopy items made for serials over five years old is found to be about 20 percent. The proportion of older publications is highest for Academic libraries (40 percent) and lowest for Federal libraries (18 percent). This results in a relative change in average volume per library between the Academic and Federal libraries. One might speculate that the major reason for interlibrary loans being older is that libraries did not subscribe to older issues of serials and therefore, need to get copies of articles from other libraries. The distribution of the age of photocopy items is given in Section 5.

Tables 4.27 and 4.28 are given below to present another perspective of the total and average numbers of photocopy items within libraries. Here we give these figures for serials under six years, for serials with less than six copies, and for serials meeting both conditions.

We made an attempt to estimate the proportion of photocopying that would involve serial titles having more than five photocopies made for local users in the past year. We applied the same estimation procedure that was used in the interlibrary loan estimates of the distributions of photocopy items. Results were tabulated for each library to determine the number of serial titles having one, two, three, and so on, photocopy items made during the sampling peirod. Obviously, substantially more photocopy items were observed for local use than were observed for interlibrary loan.

It was found that a much lower proportion of photocopy items are under six copies. In fact, over all libraries, total photocopy items drop only 32 percent after serials over five years and under six copies are excluded. The distribution of photocopy items by serial title is highly skewed. For example, in Public libraries, 54 percent of the serials have fewer than five copies, which accounts for seven percent of the photocopy items. Similar shaped distributions are found for the other types of libraries as well.

Table 4.27 NUMBER OF PHOTOCOPY ITEMS OF DOMESTIC, COPYRIGHT SERIALS MADE FOR LOCAL USERS BY PUBLICATIONS UNDER SIX YEARS OLD, AND MORE THAN FIVE COPIES, BY TYPE OF LIBRARY (1976)
(Thousands of Photocopy Items)

Type of Library	All Serials	Serial Characteristics			
		>5 Years	<6 Years	>5 Copies	<6 Years and >5 Copies
Public	7,390	1,460	5,930	6,850	5,520
Academic	1,760	700	1,060	1,740	1,040
Special	7,940	1,580	6,360	5,830	4,960
Federal	1,950	360	1,590	1,880	1,570
All Libraries	19,040	4,090	14,940	17,390	12,880

SOURCE: King Research, Inc.: National Library Survey

Table 4.28 NUMBER OF PHOTOCOPY ITEMS PER LIBRARY OF DOMESTIC, COPYRIGHT SERIALS MADE FOR LOCAL USERS BY PUBLICATIONS UNDER SIX YEARS OLD, MORE THAN FIVE COPIES, BY TYPE OF LIBRARY (1976)

(Average Number of Photocopy Items Per Library)

Type of Library	All Serials	Serial Characteristics			
		> 5 Years	< 6 Years	> 5 Copies	< 6 Years and > 5 Copies
Public	890	170	710	820	660
Academic	580	230	350	570	340
Special	930	190	750	680	580
Federal	1,370	260	320	1,320	1,100
All Libraries	890	190	700	810	480

SOURCE: King Research, Inc.: National Library Survey

Since the number of photocopy items is higher for local users than for interlibrary loans, the distribution spreads out somewhat more. Data for all domestic photocopy items and for those for publications over five years old and those that are not used for replacement or classroom use by faculty are given in Table 4.29 below.

Table 4.29 PROPORTION OF LIBRARIES THAT HAVE VARIOUS LEVELS OF PHOTOCOPY ITEMS BY THREE CONDITIONS OF ELIGIBILITY (1976) (Proportion of Libraries)

Serial Characteristics	Number of Eligible Photocopy Items				
	0-250	251-1000	1001-5000	5001-10000	> 10000
All Domestic P/C Items	0.62	0.14	0.20	0.02	0.02
Publication < 6 Years	0.66	0.15	0.15	0.04	0.01
Not for Replacement/ Classroom Use	0.67	0.14	0.15	0.04	0.01

SOURCE: King Research, Inc.: National Library Survey

Only two percent of the libraries have over 10,000 photocopy items made for local users and that number decreases to about one-half when publications over five years old and photocopying for replacement and classroom use are not included. By excluding single photocopy items made for individuals, or by applying the five and under rule, the distribution would shift substantially to the left. It would probably closely resemble that observed for interlibrary loan.

As with photocopy items made for interlibrary loan, we find that a large proportion of photocopy items made for local users are prepared by a small proportion of libraries. These data are displayed on the next page in Figure 4.7.

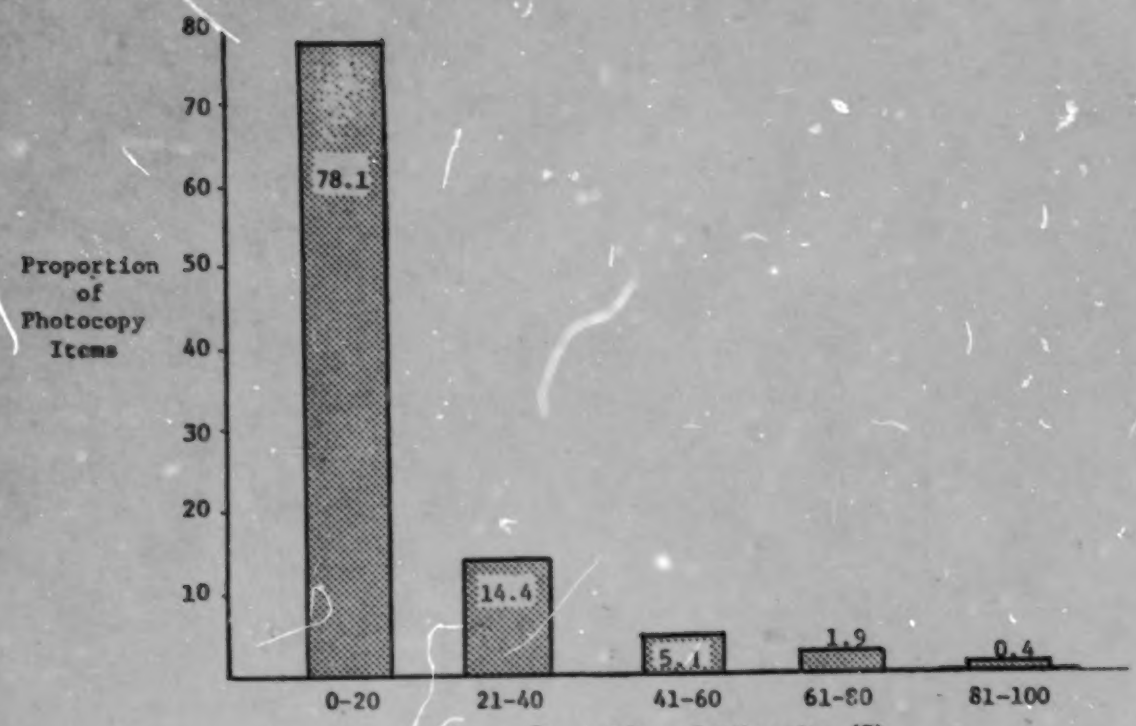


Figure 4.7 Distribution of Local Use Photocopy Items by Proportion of Libraries (1976)

Approximately 20 percent of the libraries are found to make 78 percent of the photocopy items prepared by library staff for local users. About four percent of the photocopy items are made for local users by 50 percent of the libraries and the remaining 50 percent of the libraries made 96 percent of photocopy items for local users.

Considering the distribution of number of pages per photocopy transaction (Figure 4.8), we find that 17 percent of the transactions are 1 or 2 pages, 29 percent are 3-10 pages, and 55 percent are more than 10 pages. This distribution is quite different from that for interlibrary loan photocopy items (see p. 76).

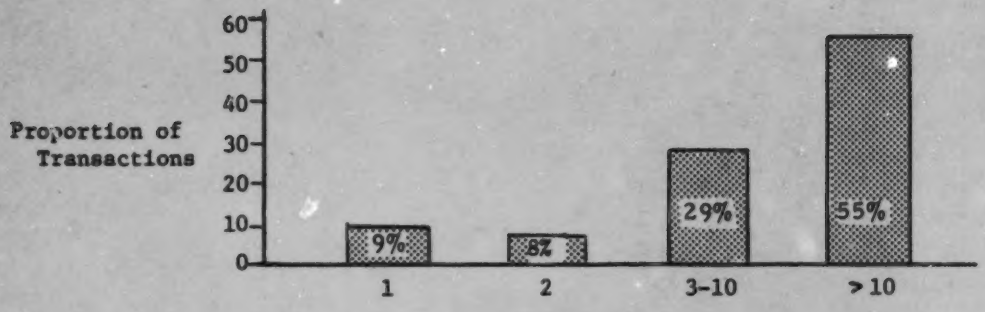


Figure 4.8 Proportion of Number of Pages of Photocopy Transactions of Serials Made for Local User Request

4.4 Estimated Volume of Photocopying of Serials for Intrasystem Loan

As noted earlier, photocopying for intrasystem loan requests (i.e., in response to requests from branch libraries or other libraries within a system) has an uncertain status regarding the proportion eligible for royalty payment. In this section we provide some breakdowns of ISL photocopying of serials which might be useful in this regard.

The amount of photocopying by library staff for intrasystem loan (ISL) is quite high. In fact, it appears that the total volume of photocopying for this source of request is higher than for interlibrary loan. However, in reviewing individual responses, it was noticed that a fair amount of photocopying involved a large number of photocopy items (say, 20) of a single page. Perhaps some of this is a regular photocopying of title pages or tables of contents that may be used for display in branch libraries or for current awareness distribution for organizational offices.

The total photocopying for intrasystem loan comes to nearly 14.5 million photocopy items. Of those about 82 percent were indicated to be copyrighted, and the copyright status of approximately 5.5 percent was recorded as unknown or was not reported. These results are reported in Table 4.30 by type of library.

Table 4.30 NUMBER OF PHOTOCOPY ITEMS OF SERIALS FOR INTRASYSTEM LOAN BY COPYRIGHTED AND NOT COPYRIGHTED, BY TYPE OF LIBRARY (1976)

(Thousands of Photocopy Items)

Type of Library	All Serials	Copyrighted	Not Copyrighted	Unknown
Public	5,370	4,680	540	150
Academic	2,010	1,630	300	80
Special	5,630	4,780	290	560
Federal	1,460	860	600	< 10
All Libraries	14,470	11,950	1,730	790

SOURCE: King Research, Inc.: National Library Survey

The largest volume of copyrighted serial photocopy items for intrasystem loan is found in Special libraries (4.8 million) and Public Libraries (4.7 million) and the least in Academic and Federal libraries (1.6 million and .9 million, respectively). However, as shown in Table 4.31, the Federal libraries average the greatest photocopying for intrasystem loan with 1,000 photocopy items per library.

Table 4.31 NUMBER OF PHOTOCOPY ITEMS PER LIBRARY OF SERIALS FOR INTRASYSTEM LOAN BY COPYRIGHTED AND NOT COPYRIGHTED, BY TYPE OF LIBRARY (1976)

(Average Number of Photocopy Items Per Library)

Type of Library	All Serials	Copyrighted	Not Copyrighted	Unknown
Public	600	600	100	-
Academic	700	500	100	-
Special	700	600	-	100
Federal	1,000	600	400	-
All Libraries	700	600	100	-

SOURCE: King Research Inc.: National Library Survey

Of the total copyrighted photocopy items prepared in response to intrasystem loan requests, 9.8 million are from serials published domestically (Tables 4.32 and 4.33). The estimated number of photocopy items of foreign published serials is highest for Special libraries (714 thousand) and this number is very low for Public libraries (less than 1,000 photocopy items). Thus, the average photocopying of domestic serials remains high in Public libraries (550 photocopy items per library) and decreases for the other three types of libraries (ranging from 230 to 440 photocopy items per library). We note that the largest proportion of unknown or unreported domestic or foreign publisher status is for Federal libraries.

Table 4.32 NUMBER OF PHOTOCOPY ITEMS OF COPYRIGHTED SERIALS FOR INTRASYSTEM LOAN, BY DOMESTIC AND FOREIGN SERIALS, BY TYPE OF LIBRARY (1976)

(Thousands of Photocopy Items)

		Type of Publisher		
Type of Library	All Publishers	Domestic	Foreign	Unknown
Public	4,680	4,590	<1	88
Academic	1,630	1,150	461	22
Special	4,780	3,750	714	318
Federal	860	330	189	337
All Libraries	11,950	9,820	1,365	765

SOURCE: King Research, Inc.: National Library Survey

Table 4.33 NUMBER OF PHOTOCOPY ITEMS PER LIBRARY OF COPYRIGHTED SERIALS FOR LOAN, BY DOMESTIC AND FOREIGN SERIALS, BY TYPE OF LIBRARY (1976)

(Average Number of Photocopy Items Per Library)

		Type of Publisher		
Type of Library	All Publishers	Domestic	Foreign	Unknown
Public	600	550	0	10
Academic	500	380	152	7
Special	600	440	84	37
Federal	600	230	132	236
All Libraries	600	460	64	36

SOURCE: King Research, Inc.: National Library Survey

The volume of photocopying for intrasystem loans for replacement by libraries or for classroom use by faculty is low, as was found in photocopying of serials requests from the other two sources of transactions. In fact, it is estimated that only about 215 thousand replacements by libraries and 237 thousand photocopy items for classroom use by faculty are for intrasystem photocopying. Again, as depicted in Tables 4.34 and 4.35, the total number of photocopy items reported in the national survey as unknown or not

reported is fairly high. Public libraries have the highest volume of replacement but they and Federal libraries have the highest average. Academic libraries have the highest volume and average of photocopying for classroom use by faculty from intrasystem loans.

Table 4.34 NUMBER OF PHOTOCOPY ITEMS OF COPYRIGHTED SERIALS FOR INTRASYSTEM LOANS BY PURPOSE OF REQUEST, BY TYPE OF LIBRARY (1976)

(Thousands of Photocopy Items)

		Purpose of Request				
Type of Library	All Purposes	Replacement by Library	Classroom Use by Faculty	Other	Unknown	Unreported
Public	4,680	163	14	3,013	1,057	433
Academic	1,630	25	205	1,308	49	43
Special	4,780	--	--	3,582	239	959
Federal	860	27	18	464	209	142
All Libraries	11,950	215	237	8,367	1,554	1,577

SOURCE: King Research, Inc.: National Library Survey

Table 4.35 NUMBER OF PHOTOCOPY ITEMS PER LIBRARY OF COPYRIGHTED SERIALS FOR INTRASYSTEM LOANS BY PURPOSE OF REQUEST, BY TYPE OF LIBRARY (1976)

(Average Number of Photocopy Items Per Library)

		Purpose of Request				
Type of Library	All Purposes*	Replacement by Library	Classroom Use by Faculty	Other	Unknown	Unreported
Public	564	20	2	363	127	52
Academic	538	8	68	432	16	14
Special	562	--	--	421	28	113
Federal	601	19	13	324	146	99
All Libraries	561	10	11	393	73	74

SOURCE: King Research, Inc.: National Library Survey

*Averages, All Purposes, do not agree with Table 4.33 due to rounding.

Fewer hypothetical conditions of eligibility for royalty payment have been studied for intrasystems loans than for interlibrary loans and local users. We have, however, looked at the number of photocopy items made for serials over five years old (see Tables 4.37 and 4.38). Data for photocopy items that are single copies made for local patrons (individuals and institutions) are presented in Table 4.36 on the following page.

Table 4.36 DISTRIBUTION OF NUMBER OF TRANSACTIONS OF SERIALS MADE FOR INTRA-SYSTEM LOANS BY TYPE OF USER, BY TYPE OF LIBRARY (1976)

(Thousands of Transactions)

Type of Library	Type of User	Number of Photocopy Items					
		1	2	3-10	>10	Unknown	All Photocopy Items*
Public	Patron	600	10	10	-	40	660
	Staff	230	40	80	0	40	390
	Unknown	360	0	0	-	10	370
	All Users	1,190	50	90	0	90	1,420
Academic	Patron	1,260	30	60	0	0	1,350
	Staff	150	20	0	0	-	170
	Unknown	50	-	0	-	0	50
	All Users	1,460	50	60	0	0	1,570
Special (Profit)	Patron	680	10	60	-	10	710
	Staff	140	50	60	-	-	250
	Unknown	70	10	40	-	-	120
	All Users	840	70	160	0	10	1,080
Special (Non-profit)	Patron	40	-	10	-	-	50
	Staff	-	-	-	-	-	0
	Unknown	-	-	-	-	-	0
	All Users	40	0	10	0	0	50
Federal	Patron	330	0	10	0	0	340
	Staff	10	-	-	0	-	10
	Unknown	30	0	0	0	-	30
	All Users	370	0	10	0	0	380
All Libraries	Patron	2,860	50	150	0	50	3,110
	Staff	530	110	140	0	40	820
	Unknown	510	10	40	0	10	570
	All Users	3,900	170	330	0	100	4,500

*Total transactions do not necessarily reflect number of photocopy items since transactions are estimated only from characteristic forms. Photocopy items are estimated from volume longs and characteristics forms.

SOURCE: King Research, Inc.: National Library Survey

The numbers of photocopy items over 5 years old are displayed in Table 4.37 by type of library.

Table 4.37 NUMBER OF PHOTOCOPY ITEMS OF DOMESTIC, COPYRIGHT SERIALS MADE FOR INTRASYSTEM LOAN FROM PUBLICATIONS OVER FIVE YEARS OLD BY TYPE OF LIBRARY (1976)

(Thousands of Photocopy Items)

Type of Library	All Serials	Age of Serials > 5 Years	Age of Serials < 6 Years
Public	4,590	1,330	3,260
Academic	1,150	320	830
Special	3,750	790	2,960
Federal	330	170	150
All Libraries	9,820	2,650	7,170

SOURCE: King Research, Inc.: National Library Survey

The average numbers of photocopy items per library for serials over five years old are given in Table 4.38.

Table 4.38 NUMBER OF PHOTOCOPY ITEMS PER LIBRARY OF DOMESTIC, COPYRIGHT SERIALS MADE FOR INTRASYSTEM LOAN FOR PUBLICATIONS OVER FIVE YEARS OLD BY TYPE OF LIBRARY (1976)

(Average Number of Photocopy Items Per Library)

Type of Library	All Serials	Age of Serials >5 Years	Age of Serials ≤6 Years
Public	550	160	390
Academic	380	106	274
Special	440	92	348
Federal	230	115	115
All Libraries	460	124	336

SOURCE: King Research, Inc.: National Library Survey

One feature of intrasystem loans that has been noted is the number of loans that involve transactions with one or two pages of a number of copies. These transactions may be for photocopies of the title pages and/or tables of content that are sent to branch libraries for current awareness. The extent of this phenomenon is displayed in Table 4.39.

The distribution of number of pages for intrasystem loan photocopying items is shown in Figure 4.9 below. It indicates that 25 percent of photocopy items are one page, 11 percent are two pages, 48 percent are 3-10 pages, and 17 percent are more than 10 pages.

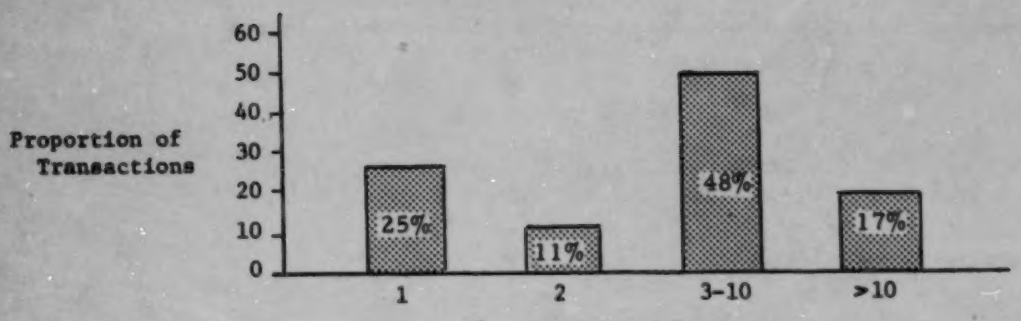


Figure 4.9 Proportion of Number of Pages of Photocopy Transactions of Serials Made for Intrasystem Loan Request For All Libraries

Table 4.39 NUMBER OF PHOTOCOPY TRANSACTIONS OF SERIALS MADE FOR INTRASYSTEM LOAN THAT HAVE SINGLE PAGE AND MULTIPLE COPIES BY TYPE OF LIBRARY (1976)

(Thousands of Transactions)

Type of Library	All Transactions*	No. of Pages: 1			2			3-10			10		
		1 Copy	2 Copies	>2 Copies	1 Copy	2 Copies	>2 Copies	1 Copy	2 Copies	>2 Copies	1 Copy	2 Copies	>2 Copies
Public	1,045	380	30	70	120	10	-	390	10	20	20	<1	8
Academic	1,500	150	20	20	150	<1	<1	770	10	10	340	20	10
All Special	990	100	10	30	90	30	30	480	20	60	140	10	6
Federal	340	10	2	<1	30	<1	<1	190	<1	5	110	<1	-
All Libraries	3,870	640	60	120	390	40	30	1,830	40	90	610	30	20

*Transactions do not include those where number of pages or copies are not reported.

SOURCE: King Research, Inc.: National Library Survey

4.5 Copyright Royalty Library Survey

As part of our study, a questionnaire was sent to the sample of libraries from the national survey after data on photocopying had been collected. This "Copyright Royalty Library Survey" requested data on the following:

- Number of photocopying machines and number of exposures
- Photocopying and ILL costs
- Librarians' preferences for alternative royalty payment mechanisms
- Librarians' assessment of the impact of a royalty payment mechanism.

This section describes responses to this survey.

4.5.1 Estimated Number of Photocopying Machines

Librarians were asked to report the number of paper-to-paper photocopying machines in their libraries in each of the following categories:

1. Total number of paper-to-paper photocopying machines operated by or in the library.
2. Number of machines reported in (1) which are regularly (at least once per week) used by or for library staff or patrons for copying library materials.
3. Number of machines reported in (2) used exclusively by library patrons for the unsupervised copying of library materials.

These questions were asked so that we could distinguish machines used exclusively for office copying from those used totally or partially for the copying of library materials. We discovered in several pretests of this questionnaire that it is difficult for librarians, especially in smaller libraries with fewer machines, to distinguish between machines used only by staff and machines used only by patrons, hence the wording of Question 2.

Question 3 was included to differentiate machines used exclusively by patrons from other machines. This was done so that we could identify copies or machines which would not be included in the category, "by or for library staff."

Results are displayed in the Table 4.40. The average number of photocopying machines in Academic libraries is 3.7 machines per library. The highest value reported is 64 machines, while the low value is 1, evidence of a very skewed distribution. The low average is due to the large proportion of U.S. Academic libraries that are small colleges such as community colleges and other small academic institutions.

The average number of Academic library machines used by staff or patrons for the photocopying of library materials is slightly less, 3.2. The average number of machines used exclusively by library patrons for their own copying of library materials is 2.0. If 2.0 is subtracted from 3.2, the number 1.2 is generated, which represents an estimate of the average number of machines in U.S. Academic libraries responsible for the volume of Academic library photocopying estimated in the national library survey.

The average number of paper-to-paper photocopying machines in Public libraries is 1.7 machines. This low number is accounted for by the large number of small Public libraries in the United States serving populations of less than 25,000. When these smaller libraries are not included, (they comprise approximately 82 percent of the population of U.S. Public libraries), the average number of machines in the remaining population rises to 4.5 machines. This is evidence of a distribution skewed towards the high end of the scale.

Both Special and Federal libraries have fewer machines per library than Public and Academic libraries, with 1.1 and 1.5 machines. It is noted that both Special and Federal strata included significantly more libraries reporting zero machines of their own than the other two categories. The smaller size of most Special and Federal libraries presumably results from their reliance upon their parent institution's machines for their photocopying of library materials.

Table 4.40 NUMBER OF PAPER-TO-PAPER PHOTOCOPYING MACHINES PER LIBRARY OR LIBRARY SYSTEM BY CATEGORY OF MACHINE, BY TYPE OF LIBRARY (1976)

(Average Number of Machines Per Library)

Type of Library	Category of Machine	Average Number of Machines
Public	Total Number[1]	1.7
	Staff or Patrons[2]	1.7
	Patrons Only[3]	.7
Academic	Total Number	3.7
	Staff or Patrons	3.2
	Patrons Only	2.0
Special	Total Number	1.1
	Staff or Patrons	1.1
	Patrons Only	.3
Federal	Total Number	1.5
	Staff or Patrons	1.5
	Patrons Only	.6
All Libraries	Total Number	1.7
	Staff or Patrons	1.7
	Patrons Only	.7

SOURCE: King Research, Inc.: National Library Survey

[1] "What is the TOTAL number of paper-to-paper photocopying machines operated by or in your library?"

[2] "How many of the machines reported in (1) above are regularly (at least once per week) used by or for library staff *or patrons* for copying library materials? (Exclude machines used exclusively for office-type copying such as correspondence, catalog cards, etc.)"

[3] "How many of the machines reported in (2) above are used exclusively by library patrons for the unsupervised copying of library materials? (By "unsupervised" is meant that patrons may operate the machines without the direct permission or assistance of library staff, as in the case of patron-operated coin machines.)"

It may appear that the number of machines which might need to be monitored for photocopying is quite low. This impression, however, may be somewhat misleading, since there is evidence of very skewed distributions.

Those libraries most likely to photocopy the largest volumes of copyrighted materials have more photocopying machine and make heavier use of them. Yet, the majority of libraries have few relevant machines, expecially when machines for office copying and exclusive patron use are excluded.

A more general picture is given by estimating the total number of paper-to-paper photocopying machines in U.S. libraries, by type of library, as shown in Table 4.41. Public, Academic, Special, and Federal libraries in the United States operate a total of approximately 37 thousand paper-to-paper photocopying machines. Of these, about 35 thousand machines are used by library staff or patrons for copying library materials.

Table 4.41 NUMBER OF PAPER-TO-PAPER PHOTOCOPYING MACHINES IN U.S. LIBRARIES BY CATEGORY OF MACHINE, BY TYPE OF LIBRARY (1976)

(Thousands of Photocopying Machines)

Type of Library	Category of Machine			
	Total Number	Staff or Patrons	Patrons Only	Relevant Machines
Public	14.1	14.1	5.8	8.3
Academic	11.2	9.7	6.1	3.6
Special	9.4	9.4	2.6	6.8
Federal	2.1	2.1	.9	1.2
Total	36.8	35.3	15.4	19.9

SOURCE: King Research, Inc.: National Library Survey

Approximately 15 thousand of these machines are used exclusively by library patrons.

If we subtract these last two figures, we obtain approximately 20 thousand "relevant machines." This is an estimate of the total number of machines in the United States upon which library materials are photocopied

by library staff, excluding machines operated exclusively by patrons. Public libraries accounted for nearly 42 percent of these machines, Special libraries for 34 percent, Academic libraries for 18 percent, and Federal libraries for 6 percent.

4.5.2 Estimated Volume of Number of Photocopy Exposures

Librarians were also asked to record the total number of exposures* made on the three categories of paper-to-paper photocopying machines described in the previous section. These results are described in Table 4.42. Some librarians do not know the total annual exposures because maintenance of these machines is performed by a contractor or another department within the parent institution.

This lack of knowledge among librarians may have implications for some alternative royalty payment mechanisms. For example, if an exise tax or fee on machines (3) were to be levied only on machines operated in libraries, one would need to take into account libraries which do not have financial or accounting responsibility for their machines.

Again, these data show a substantial difference between total photocopies per library and the number of photocopies which are potentially eligible for royalty payment (i.e., those photocopies made by or for library staff). For example, the average annual number of total exposures for Academic libraries was 347 thousand. On machines used by Academic library staff or patrons for copying library materials, an average of 317 thousand exposures was made. Of these, an average of 202 thousand exposures per library was made on machines used exclusively for patron copies. Subtracting the last two figures, we find that, on the average, 115 thousand exposures per Academic library are potentially eligible for royalty payments. This number would be futher reduced through exclusion of non-library materials, fair use photocopying, non-copyrighted materials, etc.

---

*The reader is cautioned that the term "exposures" is not equal to the term "pages," since a single page of a source item may require more than one exposure to make a complete photocopy, and vice versa.

Table 4.42 NUMBER OF EXPOSURES ON PAPER-TO-PAPER PHOTOCOPYING MACHINES PER LIBRARY BY CATEGORY OF MACHINE, BY TYPE OF LIBRARY (1976)

(Average Number of Exposures Per Library in Thousands)

Type of Library		Category of Machine	Exposures per Library (Thousands)
Public	(1)	Total	75
	(2)	Staff or Patrons	57
	(3)	Patrons Only	16
Academic	(1)	Total	347
	(2)	Staff or Patrons	317
	(3)	Patrons Only	202
Special	(1)	Total	162
	(2)	Staff or Patrons	146
	(3)	Patrons Only	Not Available
Federal	(1)	Total	246
	(2)	Staff or Patrons	234
	(3)	Patrons Only	Not Available
All Libraries	(1)	Total	160
	(2)	Staff or Patrons	141
	(3)	Patrons Only	Not Available

SOURCE: King Research, Inc.: National Library Survey

This figure would be reduced even futher if we excluded non-copyrighted materials. books, occasional unsupervised patron copying and non-library materials that are also copied on machines operated by or for library staff.

When exposures per library are considered, Academic libraries have the largest number, with 347 thousand exposures per library, followed by Federal (246 thousand), Special (162 thousand), and Public (75 thousand). A slightly different picture is created by looking at exposures per machine, which takes into account the different number of total machines per library.

In Table 4.43 we see that, in terms of use made of individual machines, Federal libraries are the largest, followed by Special libraries, then Academic

libraries and Public libraries. The Federal libraries ratio is affected by the large national libraries, while presumably the Special library ratio is also affected by the heavy use of individual machines relative to Academic and Public libraries.

Table 4.43 RATIO OF AVERAGE ANNUAL PHOTOCOPY EXPOSURES TO MACHINES PER LIBRARY, BY TYPE OF LIBRARY (1976)

Type of Library	Total Exposures per Library (Thousands)	Average Total Machines per Library	Exposures per Machine[1] (Thousands)
Public	75	1.7	44
Academic	347	3.7	94
Special	162	1.1	147
Federal	246	1.5	164

SOURCE: King Research, Inc.: National Library Survey

[1](Total exposures per library) ÷(Average machines per library)

4.5.3 Other Photocopying Machines

Librarians were asked if there were other paper-to-paper photocopying machines operated within other local offices or departments of their parent institution or company. Table 4.44 shows the responses by percentage to this question. Respondents who replied "yes" to this question were then asked, "To the best of your knowledge, is the volume of exposures made of *copyrighted books and serials* on these other machines greater than, less than or about the same as the volume of exposures of copyrighted books and serials made on all library staff- and user-operated machines?" Responses to this question are displayed in Table 4.45.

Table 4.44 PROPORTION OF LIBRARIES REPORTING THE EXISTENCE OF OTHER PHOTOCOPYING MACHINES WITHIN THEIR PARENT INSTITUTION OR COMPANY, BY TYPE OF LIBRARY (1976)

(Proportion of Responses in %)

Type of Library	Response				
	Yes	No	Not Applicable	No Response	Total
Public	23.9	34.1	40.9	1.2	100.1
Academic	93.7	6.2	0.0	0.1	100.0
Special	74.7	17.6	7.6	0.1	100.0
Federal	62.3	9.5	28.2	0.0	100.0
All Libraries	56.7	21.9	21.0	0.5	100.1

SOURCE: King Research, Inc.: National Library Survey

Table 4.45 PROPORTION OF LIBRARIES ESTIMATING THE VOLUME OF EXPOSURES MADE OF COPYRIGHTED BOOKS AND SERIALS ON NON-LIBRARY MACHINES, BY TYPE OF LIBRARY (1976)

(Proportion of Responses in %)

Type of Library	Response					
	Greater Than	Less Than	About the Same	Don't Know	No Response	Total
Public	3.6	78.8	0.0	12.8	4.8	100.0
Academic	1.7	64.8	1.4	32.0	0.1	100.0
Special	12.9	45.4	3.3	32.1	6.3	100.0
Federal	4.6	21.9	0.0	73.5	0.0	100.0
All Libraries	7.1	59.5	1.5	27.5	4.4	100.0

SOURCE: King Research, Inc.: National Library Survey

Table 4.44 shows that, except for Public libraries (which tend to be "stand-alone" institutions), most libraries report that their parent institution has photocopying machines. This question was asked so that we could determine if there were other machines, not included in this study, upon which photocopy items of copyrighted materials (not necessarily library materilas) could be made. Academic libraries' high affirmative response (93.7%) is presumably accounted for by other machines in administrative and departmental offices.

Table 4.45 is based upon the replies of those respondents who replied neither "no" nor "not applicable" to the previous question. It is cautioned that this question should only be considered suggestive of the volume of copyright-photocopying on non-library machines. The high rate of "don't knows" among Federal libraries could be due to either a lack of knowledge or legal advice within the organization. Still, all types of libraries estimated this photocopying to be less than the library's photocopying of coprighted material.

4.5.4 Impact of Copyright Guidelines on Serial Photocopying Requested or Received by Interlibrary Loan

According to guidelines issued by CONTU, responsibility for interlibrary loan photocopying of copyrighted serial articles belongs to the requesting library as of January 1, 1978. Since this responsibility might include payment of royalties to copyright owners for serial article photocopying which is not exempt from payment, librarians were asked several questions about the effect that implementation of these guidelines might have upon their libraries' interlibrary loan operations where implementation of such guidelines require the checking of outgoing serial article requests.

This question was asked for each of four categories representing four possible screening checks which a library might make in determining compliance with photocopying guidelines. (We note here that the CONTU

interlibrary loan guidelines and the Guidelines for Classroom Copying have been considerably condensed in this question in an attempt to simplify respondent effort.)

The question was asked as follows:

> "Were your library to determine the following royalty exemption category for each serial article photocopy requested or received via ILL on a regular basis, would your library incur any extra costs which your budget would be unable to absorb without obtaining additional staff or funding?"

Results are displayed in Table 4.46 on the following page.

The minimum "yes" response occurs for screening type (a), since checking a title is a common practice prior to making an interlibrary loan request.

Screening type (b) implies that a file of some sort has been set up upon which outgoing photocopy requests are tallied by serial title, date of serial, and date of request. Here, significantly more libraries report some difficulty in absorbing the added cost, especially Federal libraries (56.8%). Special libraries would appear to have the least trouble with this category (only 32.1% respondents replied "yes"). Perhaps this is because of their smaller size and less frequent use of interlibrary loan channels. Sixty-one percent of Academic libraries report they would not incur extra operational costs, perhaps due to their pre-existing files which could be used or adapted.

Screening types (c) and (d) both refer to CONTU guidelines and Classroom use criteria which may require a "purpose of request" distinction be made at the time an interlibrary loan is negotiated. Special libraries, not surprisingly, have the least trouble with these categories, since their clientele are not generally drawn from the educational community. Federal libraries would have the most problems. In summary, a majority of Public, Academic, and Special libraries estimate that they would be able to absorb the costs of making the extra purpose of request and use by classroom teacher determinations.

Table 4.46 PROPORTION OF LIBRARIES INDICATING THAT COST WOULD BE INCURRED FOR CHECKING OUTGOING SERIAL ILL REQUESTS BY TYPE OF SCREENING, BY TYPE OF LIBRARY (1976)

(Proportion of Responses in %)

Type of Screening	Type of Library	Would Library Incur Extra Cost Which Could Not Be Absorbed? Yes	No	No Response	Total
(a) To determine if your library has a current subscription (or one on order) for a title which is still being published at the time you make the request.	Public	17.6	78.6	3.9	100.1
	Academic	8.7	89.8	1.5	100.0
	Special	7.2	85.5	7.3	100.0
	Federal	4.6	92.4	3.0	100.0
	All Libraries	11.3	83.9	4.9	100.0
(b) To determine if your library has already requested a photocopy from this same title via ILL at any time during the current calendar year.	Public	40.7	55.5	3.9	100.1
	Academic	37.5	61.1	1.5	100.1
	Special	32.1	58.1	9.8	100.0
	Federal	56.8	42.2	1.0	100.0
	All Libraries	37.9	56.4	5.7	100.1
(c) To determine if the requested article will be used for scholarly research by a teacher in a not-for-profit educational institution.	Public	38.5	57.6	3.9	100.0
	Academic	22.8	75.7	1.5	100.0
	Special	17.9	65.3	16.8	100.0
	Federal	42.1	39.6	18.3	100.0
	All Libraries	28.3	62.0	9.7	100.0
(d) To determine if the requested article will be used for classroom purposes by a teacher in a not-for-profit educational institution.	Public	41.7	54.5	3.9	100.1
	Academic	24.4	74.1	1.5	100.0
	Special	15.1	68.0	16.9	100.0
	Federal	42.0	39.5	18.5	100.0
	All Libraries	28.7	62.0	9.8	100.0

SOURCE: King Research, Inc.: National Library Survey

4.5.5 Impact of Copyright Guidelines on Serial Photocopying for Local Patrons

In the previous section we described librarians' assessments of their ability to absorb increased costs if they were required to screen outgoing serial interlibrary loan requests to determine if they were complying with various photocopying guidelines set up to aid in defining "fair use." At this time guidelines comparable to the CONTU/interlibrary loan guidelines, which limit the number of photocopy items that can be made from a given copyrighted serial title, have not been developed or added to the Copyright Law to deal with non-classroom photocopying by library staff. Therefore, we ask librarians in the national library survey to respond to an analagous set of guidelines that might be applied to photocopying in response to local user requests. The question was phrased as follows:

> "For the photocopying of copyrighted serial articles made by or for your library staff for your local patrons, would regular determination of the following categories result in your library incurring any extra costs which your budget would be unable to absorb without obtaining additional staff or funding? (Please exclude from consideration photocopies of copyrighted serial articles which your library makes for or receives via interlibrary loan (ILL)."

Responses are displayed in Table 4.47 on the following page.

The lowest "yes" response occurs for screening type (a). The majority of libraries estimate that they would not have cost problems associated with checking for a current title.

There are, except for Federal libraries, significantly more "yes" responses to type (b) screening for local patron copying than for interlibrary loan requests, presumably because of the savings associated with pre-existing interlibrary loan files. Nearly 64 percent of Public libraries would incur extra costs for screening previous photocopying of a serial title requested by a local patron, versus 41 percent for screening outgoing interlibrary loan requests. (It is noted here that it is presently difficult to know without

examination of an item whether or not it is subject to copyright protection. This problem might be remedied for pre-1978 items by a list of titles such as the one proposed for the AAP's Copyright Clearance Center.)

Table 4.47 PROPORTION OF LIBRARIES INDICATING THAT COST WOULD BE INCURRED FOR CHECKING PHOTOCOPYING OF SERIALS FOR LOCAL PATRONS BY TYPE OF SCREENING, BY TYPE OF LIBRARY (1976)
(Proportion of Responses in %)

Type of Screening	Type of Library	Would Library Incur Extra Costs Which Could Not Be Absorbed? Yes	No	No Response	Total
(a) To determine if your library has a current subscription (or one on order) for a title which is still being published at the time you process the request.	Public	26.7	69.5	3.9	100.1
	Academic	18.2	76.2	5.6	100.0
	Special	9.8	87.6	2.6	100.0
	Federal	14.3	76.4	9.3	100.0
	All Libraries	17.9	78.1	4.0	100.0
(b) To determine if your library has already made a photocopy from this same serial title for a local patron at any time during the current calendar year.	Public	63.8	32.3	3.9	100.0
	Academic	61.1	33.2	5.6	99.9
	Special	52.5	45.0	2.5	100.0
	Federal	55.4	35.5	9.1	100.0
	All Libraries	58.3	37.7	4.0	100.0
(c) To determine if the requested article will be used for scholarly research by a teacher in a not-for-profit educational institution.	Public	45.7	50.4	3.9	100.0
	Academic	28.4	64.7	6.9	100.0
	Special	19.9	68.0	12.1	100.0
	Federal	28.9	52.6	18.5	100.0
	All Libraries	31.8	59.6	8.6	100.0
(d) To determine if the requested article will be used for classroom purposes by a teacher in a not-for-profit educational institution.	Public	45.7	50.4	3.9	100.0
	Academic	30.0	63.0	6.9	99.9
	Special	17.7	70.3	12.0	100.0
	Federal	28.9	52.6	18.5	100.0
	All Libraries	31.1	60.3	8.6	100.0

SOURCE: King Research, Inc.: National Library Survey

Reactions to type (c) and (d) screening are comparable. Special libraries do not generally perceive screening for purpose of request or for use to be much of a cost problem. Both Public and Academic libraries find that checking of local patrons' photocopying requests is more expensive than interlibrary loan checking, but the difference is not large. However, significantly more Public, Academic, and Federal libraries would incur extra costs which could not be absorbed than would Special libraries.

To summarize:

- A majority of libraries would not incur unabsorbable extra costs if they were required to determine if their library had a current or on-order subscription.
- Except for Federal libraries, significantly more libraries would incur extra costs if regularly required to determine if they had made a photocopy from a serial title previously for a local patron than would incur such costs if required to make this determination for interlibrary loan.
- Determination of requestor status for copying for local patrons would be somewhat more costly than for interlibrary loan requests, except Federal libraries.

4.5.6 Preferences for Alternative Royalty Payment Mechanisms

Based upon a review of the literature and upon discussions with this study's Advisory Committee, a list of hypothetical royalty payment mechanisms was developed. In this list an attempt was made to address as many design aspects of the RPM as possible. The payment mechnaisms included in the list do not reflect a prior assessment of feasibility or preference. Rather, our objective was to provide librarians responsible for setting or stating library policy an opportunity to rank a broad range of alternatives according to their preferences.

The question was asked as follows:

"What are your library's relative preferences for the following mechanisms for making royalty payments for photocopying of copyrighted serial articles? Assume that each alternative would result in the same amount being paid by your library for royalties, and rank the alternatives from 1 to 8, with 1 = MOST PREFERRED and 8 = LEAST PREFERRED."

"Multiple Copies" were defined as follows:

"MULTIPLE COPIES - more than 5 copies from the same serial title either made for local patrons by or for your library staff or received by your library in response to an ILL request."

Since it was impossible to agree upon a definition of systematic photocopying, we were not able to specify a time period over which multiple photocopying would take place. That is, it was impossible to tell the respondent to distinguish between five photocopy items made during a single transaction and five photocopy items made over several transactions or days.

Respondents were also asked to assume that each alternative would result in their libraries paying the same amount for royalties. This was added to suggest that the respondent evaluate the alternatives according to criteria other than gross royalty payments, since it was not feasible to give any indication of what the amount for royalty payments might be. In effect, then, the respondent was asked to evaluate the responses by criteria such as practicality, fairness or complexity.

Table 4.48 displays the proportion of respondents ranking each alternative as "most preferred."

Alternative G, the royalty stamp or coupon option, was ranked most often as "most preferred" by Public libraries (19 percent). The alternative ranked least often by Public librarians as "most preferred" is alternative A, the agreement to buy multiple copies or reprints of serial articles directly from the serial publishers or their agents.

Table 4.48 PROPORTION OF LIBRARIES RANKING ONE OF EIGHT ALTERNATIVE ROYALTY PAYMENT MECHANISMS AS "MOST PREFERRED" BY TYPE OF LIBRARY (1976)

(Proportion of Responses Ranked as "Most Preferred" in %)

Alternative Royalty Payment Mechanisms	Type of Library				All Libraries
	Public	Academic	Special	Federal	
(a) Libraries would agree to purchase multiple copies or reprints of serial articles directly from the serial publisher or their agents.	5	0	5	0	4%
(b) Libraries would pay an optional extra subscription price for those serials from which multiple copies would be made.	8	4	7	3	7%
(c) Libraries would pay a fee for each photocopying machine to a central agency, which would then distribute these payments as royalties to copyright owners.	13	14	11	14	12%
(d) Payment for copyright royalties would be made by libraries to individual publishers, requiring a tally to be kept by libraries for multiple copies of affected serial titles.	9	2	0	3	4%
(e) Payment for copyright royalties would be made by libraries to a centralized agency which would have the responsibility for making a count of individual libraries' photocopies and for transmitting payments to publishers.	11	6	3	2	6%
(f) Libraries would agree to purchase multiple copies or reprints of serial articles from a centralized agency authorized or designated by publishers which would then distribute copyright royalties.	10	14	5	16	9%
(g) Libraries would purchase "royalty stamps" or coupons from a centralized agency which would then be affixed to multiple copies of a copyrighted serial article.	19	23	16	5	17%
(h) All subscription prices would be higher, automatically giving libraries permission to make multiple copies.	16	34	25	30	23%
Average non-response	15	15	15	15	15%

SOURCE: King Research, Inc.: National Library Survey

*Non-response percents were computed for each library type and for each alternative. Individual non-response percents were then averaged over all alternatives for each library type. Since response percents were calculated independently for each alternative, columns do not total to 100%.

Academic libraries most often ranked alternatives H, higher subscription prices, as "most preferred" (34 percent). Here also the alternative ranked least often as "most preferred" is the agreement to purchase multiple copies from serial publishers or their agents.

The alternative ranked most often as "most preferred" by Special libraries is alternative H, higher subscription prices (25 percent).

The alternative ranked most often as "most preferred" by Federal libraries is again higher subscription prices (30 percent). Direct purchase of multiple copies is ranked by Federal libraries least often as the "most preferred" alternative.

It is obvious that no single alternative is ranked as "most preferred" by an overwhelmming majority of any library types. This could be due to a broad distribution of preferences across the alternatives or to librarians' lack of understanding of the intricacies of the briefly described alternatives. Four of the higher ranked alternatives — higher subscription prices, royalty stamps or coupons, purchase of copies from a central agency, and photocopyingmachine fees — incorporate a very wide variety of characteristics. The alternative that is most like the Copyright Clearance Center — alternative (E), a centralized agency responsible for counting individual photocopying and transmission of payments to publishers — is not included in this group. However, some additional analysis of this question shows that this alternative increases in importance if those alternatives ranked as 1 or 2 are aggregated.

Not surprisingly, this particular question generated the most comments. Some librarians pointed out that they found all of the alternatives repugnant, since their budgets were already strained. Some threatened that their recourse to increased costs would be subscription cancellations. A few — particularly Special librarians — said they would agree to payments if the mechanism were easy and efficient. On the whole, the written objections to royalty payment mechanisms fell into three categories:

1. The cost to the participating library of administration of the mechanism.

2. The added "red tape" and complexity of the mechanism, which could delay the library's service to the user.

3. Moral opposition and the principle of free access to information.

Keeping in mind the hypothetical nature of this question, the following hypotheses about libraries' preferences concerning royalty payment mechanisms are suggested:

1. Libraries react relatively positively to stamp or coupon mechanisms which would not require that individual counts of photocopying transactions be made by library staff.

2. Libraries react negatively to alternatives involving significantly greater responsibility on their part for the "bookkeeping" functions of the payment mechanism.

3. Libraries react positively to mechanisms which involve utilization of existing payment channels (cf. photocopying machine fee, higher subscription prices).

4. Libraries react more positively to dealing with a centralized agency than to dealing with individual publishers.

5. The probability of delay or degradation of service to users is a major concern to libraries when they consider participation in a royalty payment mechanism.

While the final list of mechanisms considered in the last section of this report is different from that described here, readers should keep these general preferences in mind as additional criteria for their own evaluation of the alternatives.

4.5.7 Estimated Current Gross Income from Photocopying and Interlibrary Loan

Libraries were asked to report their average monthly gross income for photocopying and interlibrary loan operations. These estimates were then projected to an annual basis by multiplying by 12. Results are reported in the following table.

Table 4.49 ANNUAL GROSS INCOME FOR PHOTOCOPYING AND INTERLIBRARY LOAN OPERATIONS PER LIBRARY, BY TYPE OF LIBRARY (1976)

(Average Income in $)

Type of Library	Average Annual Gross Income	
	Photocopying Income/Fees	Interlibrary Loan Income/Fees
Public	2,964	72
Academic	11,544	504
Special	96	0
Federal	3,648	1,668
All Libraries	3,085	212

SOURCE: King Research, Inc.: National Library Survey

For all types of libraries, gross income or fees from ILL (operational costs are not excluded here) is substantially less than income or fees from photocopying. On the average, Academic libraries derive the largest annual income from photocopying operations ($11,544), perhaps because of the relatively large number of coin-operated machines in Academic libraries. Next are Federal libraries with $3,648 per year, Public libraries with $2,964 per year, and Special libraries with $96 per year.

The figures for Special and Federal libraries deserve some comment. The average for Special libraries is extremely low, chiefly because most Special libraries are smaller and do not have their own photocopying machines. We hypothesize also that, even in Special libraries which have their own machines, charges and income are not incurred or earned by the library. Instead, they accrue to the parent organization.

The majority of Federal and Special libraries report zero average annual income for photocopying income and fees. The relatively high average of $3,648 for Federal libraries is chiefly due to the few large "national" libraries. If these were removed from the calculations, the average annual photocopying income for Federal libraries would drop to a figure at or below the figure for Special libraries. Federal libraries average $1,668 per year for interlibrary loan income and fees. Again, this average is primarily a result of the large national libraries. If they were excluded, annual ILL income would be nearer zero.

Academic libraries report $504 average annual income from ILL, or slightly more than 4 percent of photocopying income. Public libraries report $72, or slightly more than 2 percent of the annual photocopying income. Special libraries report $0 for ILL income.

Libraries were not asked directly how much they charged per exposure or per photocopy, because of the wide variety of pricing schedules. Indirect evidence of these pricing practices can be obtained by dividing the average annual photocopying income by the average number of exposures on staff or patron machines per library. This generates the following rough estimates of the price per exposure received by libraries:

- Public 5.2¢ per exposure
- Academic 3.6¢ per exposure
- Special 0.7¢ per exposure
- Federal 1.6¢ per exposure

According to these estimates, Public libraries probably charge the most per exposure, followed by Academic libraries and then by Federal libraries. The low cent-per-exposure figure for Special libraries may be evidence of a high degree of subsidization by Special libraries' parent institutions, since Special libraries have a higher exposure-per-machine ratio than either Public or Academic libraries.

It is possible to calculate rough estimates of "income per machine" for machines which may be used by library staff or patrons for the copying of library materials. These figures are given in the following table.

Table 4.50 ANNUAL INCOME PER PAPER-TO-PAPER PHOTOCOPYING MACHINES, PER LIBRARY BY TYPE OF LIBRARY (1976)

(Income in $)

Type of Library	Annual Photocopying Income Per Library	Average Machines per Library[1]	Annual Income Per Machine[2]
Public	2,964	1.7	1,744
Academic	11,544	3.2	3,607
Special	96	1.1	87
Federal	3,648	1.5	2,432

SOURCE: King Research, Inc.: National Library Survey

[1] Excludes machines used exclusively for copying other than library materials

[2] (Annual photocopying income per machine) ÷ (Average machines per library)

Here we see that, on the average, Academic libraries have the largest income per machine, followed by Federal libraries, then Public libraries and Special libraries.

4.5.8 Costs for Photocopying

Many libraries already perceive photocopying operations to be a burden according to Whitestone (13). The following summarizes some of the data reported by librarians on the costs of their photocopying operations.

Libraries were asked to report average monthly costs for their photocopying operations. Responses projected to an annual level are reported in the following table. Because of the large nonresponse rate to this series of questions by Special and Federal libraries (perhaps evidence that many of their librarians do not have budget-making responsibilities within the many small organizations and agencies represented by our survey) data for Public and Academic libraries only will be presented.

The question was asked as follows:

"On an average monthly basis, what is your library's cost for operating and maintaining all the paper-to-paper photocopying machines for which it is responsible? Include only the costs which the library pays."

Summaries of responses by cost category are displayed in the following table.

Table 4.51 AVERAGE ANNUAL COST FOR PHOTOCOPYING OPERATIONS PER LIBRARY FOR PUBLIC AND ACADEMIC LIBRARIES (1976)

(Cost in $)

Type of Library	Cost Category					
	Annual Rental or Lease	Supplies (Paper, toner, etc.)	Annual Maintenance Contract	Annual Staff Costs	Other Costs*	Total Costs
Public	2,640	672	240	528	-	4,080
Academic	6,000	4,368	300	4,932	660	16,260

SOURCE: King Research, Inc.: National Library Survey
*e.g., special accounting arrangements, insurance, etc.

The reported average total cost for Public libraries is $4,080 per year, and for Academic libraries, $16,260 per year. This figure is an estimate of the cost for all paper-to-paper machines in the library rather than only those machines used for photocopying library materials.

Using these data, we can make some estimates of the operational costs per machine. By dividing average annual operational cost by average number of machines per library, we find that Public library machines cost $2,400 per year per machine, and that Academic library machines cost $4,395 per year. By dividing these costs by total exposures per year, we can obtain rough estimates of cost per exposure. For Public libraries this estimated cost is 3.2¢ per exposure and for Academic libraries, it is 1.3¢ per exposure. (We caution against comparing these costs per exposure with the price per exposure figures given previously. Price per exposure was calculated by using exposures made

on machines used by staff or patrons for copying library materials. Costs per exposure as shown above includes all machines and all exposures, a significant portion of which involve photocopying by library staff of office work correspondence, catalog cards, etc.).

Average annual rental or lease costs per machine are very similar for Public and Academic libraries. Average annual rental or lease cost for Public libraries is $1,553 per library per machine. For Academic libraries this cost is $1,620 per library per machine. Because of this similarity, the disparity between Public library and Academic library operational costs must be due to other cost categories. These are supplies (paper, toner, etc.) and staff costs (operation and maintenance costs which are paid by the library). Average annual supply costs for Public libraries are $672 per library ($395 per Public library machine), and for Academic libraries, $4,368 per library ($1,180 per Academic library machine). Average annual staff costs for Public libraries are $528 per library ($311 per Public library machine), and for Academic libraries $4,932 per library ($1,333 per Academic library machine).

A possible explanation for this disparity is that both supplies and staff costs vary for individual machines while rental or lease costs per machine are fixed for individual machines. This makes sense when we recall that the ratio of exposures per machine is different for Public and Academic libraries: 44 thousand per machine for Public and 94 thousand per machine for Academic libraries. Since Academic library machines are more heavily used than Public library machines, their variable costs are higher.

While the categories of machines for which gross income and cost figures are reported may not be comparable, the data for Public and Academic libraries suggest that, on the average, these libraries may be incurring net losses for their photocopying operation when their gross income is compared to their operational costs on a per-library basis.

Some caveats are in order here. First, most costs reported in this section probably do not include general overhead inflation factors. If such factors were introduced, unit and total costs would be increased. Second, a very few libraries reported that they purchased machines during the past year, and these data are not included here as operational costs. However, if purchase costs were included, in their entirety or on a depreciated basis, they would increase these costs only slightly.

SECTION 5

IMPLICATIONS OF THE COPYRIGHT LAW AND CONTU GUIDELINES CONCERNING SERIALS FROM THE PUBLISHERS' PERSPECTIVE

Estimates in Section 4 give the total amount of photocopying of serials and the proportion of the photocopying that is eligible for royalty payments based on the Copyright Law and CONTU guidelines for interlibrary requests. Some analysis was presented for hypothetical conditions of eligibility for royalty payment for photocopy items made for interlibrary loan, local users and intrasystem loan. Estimates of the total number of photocopy items are derived by summing the amount of photocopying over libraries. These total data are useful from the perspective of the library and publishing communities, for they provide an estimate of the total photocopying subject to royalty payments under several conditions. However, these estimates do not show individual publishers the extent of photocopying for individual serial titles. In order to provide such an estimate, it is useful to sum the number of photocopy items eligible for royalty payment over all libraries for each title for publishers. This gives a basis for estimating total photocopy items for individual titles. The clearest picture of the extent of photocopying of individual titles comes from the MINITEX data base. The national library survey data are difficult to make estimates because of problems of differential weights applied to sampled libraries. Nevertheless, a technique to provide rough estimates of the distribution of number of photocopy items by serial titles was developed. The approach is discussed in detail in Appendix C.

This section is sub-divided into four parts. The first part gives the proportion of serial titles that are photocopied within libraries at various levels of copies per titles. These estimates are given for both interlibrary borrowing (MINITEX data base and national library survey) and photocopying performed by library staff for local users. The second part deals with the extent of photocopying of individual serial titles subject to royalty payment observed in 132 MINITEX libraries over an entire year. Estimates are also provided for distribution of photocopy items by serial title under hypothetical conditions of eligibility for royalty payment. The total number of interlibrary requests are

correlated with total number of subscribers given in Ulrich's International Periodicals Directory 1975-76 (11). Also, the distribution of transactions by year of publication is given since this result may have some bearing on when royalty payments may be made. The third part deals with a summary of publishers attitudes concerning the Copyright Law and potential royalty payment mechanisms. The final part presents some data for scientific and technical serials only.

* HIGHLIGHTS *

- Considering the number of photocopy items per serial title obtained by an individual MINITEX library, it is found that 2-3 percent of serial titles are borrowed more than five times and about 1 percent are borrowed more than ten times. On the national level, the proportion of serial titles with more than five photocopy items within a library is 2 percent for Public and Federal libraries, 3 percent for Special libraries, and 8 percent for Academic libraries. The proportion of serial titles having more than 10 photocopy items is .2 percent for Public libraries, .7 percent for Federal libraries, .9 percent for Special libraries, and 3 percent for Academic libraries.

- Over all libraries, it is estimated that the total number of interlibrary loan photocopy items made per serial title is distributed in the following manner: 40 percent of serial titles have 50 or fewer photocopy items each, 21 percent have 51-100 photocopy items, 32 percent have 101-500 photocopy items, and 7 percent have more than 500 photocopy items. Considering only those photocopy items not for replacement or classroom use, less than six years old, and with greater than five copies, the distribution over several titles changes to 91 percent of the titles having 50 or less photocopy items.

- For local use photocopy items over all libraries, only 10 percent of the serial titles photocopied have 100 or less photocopy items; 37 percent have 101-500 items; 20 percent have 501-1000 items, 28 percent 1001-5,000 items, and 5 percent of the serial titles will have more than 5,000 photocopy items. Considering only those photocopy items of serials less than six years old and with more than five copies, 24 percent of the serial titles will have 100 or less photocopy items. 50 percent of the serial titles will have 101-500 photocopy items, and 26 percent will have 501 items or more.

- In response to a survey conducted by Indiana University for CONTU, many publishers expressed concern about the potential complexities or bureaucracy of a royalty payment mechanism similar to concerns voiced by librarians. Publishers also appeared to prefer direct licensing of photocopying over clearinghouse arrangements for authorizing photocopying. The direct sale of reprints was more preferable to large circulation journals than to small circulation journals. Small circulation journals showed greater preference for sale of reprints through agent or clearinghouse arrangements. Publishers and libraries do not appear to share similar preferences for direct licensing; publishers rated it more highly than libraries, which prefer to minimize contracts with individual publishers.

- Based upon data from our National Library Survey, it appears that a minority of serial publishers would benefit significantly if many classes of photocopying were exempt from payment. According to the recent Indiana University survey of serials and publishers conducted during the first five months of 1977, over 50 percent of responding journals expect to receive zero royalty payments from a clearinghouse arrangement which would supply authorized copies.

5.1 Estimates of the Distribution of Photocopying and Interlibrary Loan Requests of Individual Serial Titles Within Libraries

5.1.1 Distribution of Photocopying of Interlibrary Loan Requests of Individual Serial Titles Within MINITEX Libraries

Detailed data were collected for 132 Public, Academic and Special libraries that used the MINITEX system during 1976. There was a total of 51,419 domestic serial interlibrary loan requests from these 132 libraries for an average of 390 interlibrary loan requests per library. These requests involve an average of 194 serial titles per library. Obviously, some serial titles are requested by more than one library. Over the 132 libraries, 25,624 titles were identified. However, there were only 6,345 unique serial titles when data from all 132 libraries were combined. Section 5.2 is partially devoted to an analysis of the requests summed over the 132 libraries for these 6,345 unique serial titles.

The average number of serial titles per library having at least one photocopy item for interlibrary loan is given in Table 5.1 below by type of library. The average number of photocopy items per title is also given.

Table 5.1 NUMBER OF SERIAL TITLES PER LIBRARY, NUMBER OF PHOTOCOPY ITEMS AND NUMBER OF PHOTOCOPY ITEMS PER TITLE BY TYPE OF LIBRARY-MINITEX (1976)

Type of Borrowing Library	No. of Libraries	No. of Titles	No. of Titles Per Library	No. of Photocopy Items	No. of Photocopy Items Per Title
Public	26	2,160	33	3,582	1.7
Academic	68	20,638	304	42,122	2.0
Special	38	2,826	74	5,715	2.0
All Libraries	132	25,624	194	51,419	2.0

SOURCE: King Research, Inc.: MINITEX Data Base

Academic libraries are by far more active in interlibrary loan requests and they request the most serial titles at 304 titles per library. Special libraries are next, with 74 titles and are followed by Public libraries at only 33 titles. It is significant that the average number of photocopy items per title within libraries was only 2 photocopy items per title per library.

A better portrayal of interlibrary requests by serial title is presented by the number of serial titles that have one, two, three or more interlibrary requests in a given library. Data on number of serial titles having 1, 2,..., 10 (and greater) requests are given in Table 5.2 for Public, Academic and Special libraries. The data in Table 5.2 may be read as follows. There were 1,571 serial titles in the 26 Public libraries that had a single photocopy item (for a total of 1,571 photocopy items); there were 326 serial titles in 26 Public libraries that had two photocopy items (for a total of 652 photocopy items) and so on. Two columns were added to the table. They indicate the number of titles and photocopy items that involved more than five photocopy items per title and more than 10 photocopy items per title. In Public libraries, only 62 serial titles out of 2,160 titles had more than five photocopy items (3 percent) and only 16 titles (.7 percent) had more than ten photocopy items over the 26 Public libraries. These titles had 640 (18 percent) and 305 (9 percent) total photocopy items respectively.

The proportion of serial titles that have greater than five photocopy items is between three and five percent for the three types of borrowing libraries. Similarly, the proportion of titles that have more than ten photocopy items is .007, .016 and .024 for Public, Academic and Special libraries respectively. The number of photocopy items for these titles is 305, 7,371, and 1,017 photocopy items for Public, Academic and Special libraries respectively. The average number of photocopy items for these titles is 19.1 photocopy items per title in Public libraries, 21.2 photocopy items per title in Academic libraries and 15.2 photocopy items per title in Special libraries. Clearly, the proportion of serial titles that have over ten photocopy items for given libraries is small, but the number of photocopy items is high for these serials.

Table 5.2 DISTRIBUTION OF NUMBER OF SERIAL TITLES AND NUMBER OF PHOTOCOPY ITEMS FOR INTERLIBRARY LOAN REQUESTS BY TYPE OF LIBRARY-MINITEX (1976)

Type of Borrowing Library	No. of Libraries		Number of Photocopy Items Per Serial Title												
			1	2	3	4	5	Total >5	6	7	8	9	10	Total >10	Total
Public	26	Serials	1,571	326	113	60	28	62	19	11	5	6	5	16	2,160
		Items	1,571	652	339	240	140	640	114	77	40	54	50	305	3,582
Academic	68	Serials	13,394	3527	1439	755	414	1,109	291	183	138	85	65	347	20,638
		Items	13,394	7054	4317	3020	2070	12,917	1746	1281	1104	765	650	7371	42,122
Special	38	Serials	1,901	429	185	118	57	136	33	7	11	14	4	67	2,826
		Items	1,901	858	555	472	285	1,644	198	175	88	126	40	1017	5,715
All Libraries	132	Serials	16,866	4282	1737	933	499	1,307	343	219	154	105	74	412	25,624
		Items	16,866	8564	5211	3732	2495	15,201	2058	1533	1232	945	740	8693	51,419

SOURCE: King Research, Inc.: MINITEX Data Base

This phenomenon becomes even more pronounced when serial publications that are over five years old are excluded. These results are given in Table 5.3. The number of serial titles that have greater than ten photocopy items in a given library is as follows: Public libraries have 7 titles that had more than 10 photocopy items, or an average of 18.7 photocopy items per title. Academic libraries have 126 titles with more than ten photocopy items for an average of 20.2 photocopy items per title, and Special libraries have 35 titles, or an average of 19.5 photocopy items per title. Many more serial titles have greater than ten photocopy items when all the photocopy items for a given title are summed over the 132 libraries. Similarly, there are substantially more photocopy items per title on the average. These results are given in Section 5.2. First, however, estimates are given in Section 5.1.2 for the estimated average number of photocopy items per serial per library. These data are based on data from libraries chosen in the national library survey.

5.1.2 Distribution of Photocopying of Interlibrary Loan Requests of Individual Serial Titles Within the National Survey Libraries

It is substantially more difficult to compute the estimates of the proportion of journals having specified levels of copies made. The difficulty is that one must use the MINITEX data to establish an extrapolation factor for the mathematical distribution of requests per title. The technique used to do this extrapolation is given in Appendix C. The estimated proportions of serials with greater than five photocopy items and greater than ten photocopy items are given in Table 5.4 below.

Table 5.4 PROPORTION OF SERIAL TITLES WITH GREATER THAN FIVE AND TEN PHOTOCOPY ITEMS WITHIN A LIBRARY FOR NATIONAL LIBRARY SURVEY AND MINITEX LIBRARIES (1976)

(Proportion of Titles)

Type of Borrowing Library	Proportion of Titles With >5 Photocopy Items		Proportion of Titles With >10 Photocopy Items	
	Nat. Library Survey	MINITEX	Nat. Library Survey	MINITEX
Public	0.02	0.02	0.002	0.004
Academic	0.08	0.03	0.030	0.009
Special	0.03	0.03	0.009	0.012
Federal	0.02	-	0.007	-

SOURCE: King Research, Inc.: National Library Survey

Table 5.3 DISTRIBUTION OF NUMBER OF SERIAL TITLES AND NUMBER OF PHOTOCOPY ITEMS FOR INTERLIBRARY LOAN REQUESTS FROM SERIALS PUBLISHED IN THE PAST FIVE YEARS BY TYPE OF LIBRARY-MINITEX (1976)

Type of Borrowing Library	No. of Libraries		Number of Photocopy Items Per Serial Title												
			1	2	3	4	5	Total >5	6	7	8	9	10	Total >10	Total
Public	26	Serials	919	173	50	25	11	24	6	3	1	4	3	7	1,202
		Items	919	346	150	100	52	262	36	21	8	36	30	131	1,827
Academic	68	Serials	7,926	2014	747	407	203	529	156	77	68	52	50	126	11,826
		Items	7,926	4028	2241	1628	1015	5526	936	539	544	468	500	2539	22,364
Special	38	Serials	1,346	320	127	74	39	89	22	15	9	5	3	35	1,995
		Items	1,346	640	381	296	195	1065	132	105	72	45	30	681	3,923
All Libraries	132	Serials	10,191	2507	924	506	253	642	184	95	78	61	56	168	15,023
		Items	10,191	5014	2772	2024	1265	6853	1104	665	624	549	560	3351	28,114

SOURCE: King Research, Inc.: MINITEX Data Base

It appears that Academic libraries at the national level tend to have a somewhat higher proportion of titles that have greater than five and ten photocopy items within individual libraries. Otherwise, the data are comparable.

5.2 Distribution of Photocopying of Interlibrary Loan Requests of Individual Serial Titles Over All Libraries

Publishers probably have greater interest in data that indicate the amount of photocopying of individual serial titles over all libraries, since this provides some evidence of what publishers can expect concerning total royalty payments for their serials. Unfortunately, national totals are not available in this study, but strong evidence of this result is available from MINITEX data and one can extrapolate these results to national totals with some broad assumptions. The MINITEX data are presented for the 6345 unique domestic serial titles that have at least one request from one or more of the 132 libraries used for analysis. The results are presented for a sample of 317 serials by total requests, requests of titles published less than six years ago, and requests that are eligible for royalty payment under the CONTU guidelines. Some results given in this section correlate the number of requests with number of subscribers (when data are available).

The distribution of the number of serial titles having one request, two, three and so on, is given in Table 5.5. The results displayed in Table 5.5 clearly demonstrate that the CONTU guidelines have a substantial screening effect on the number of titles with photocopy items eligible for royalty payments. To a lesser degree, they affect the total number of photocopy items for these titles that are eligible for royalty payment. Even when the photocopy items are added over 132 libraries, we find that only 140 out of 6,345 titles have more than 40 photocopy items made of them. When the number of photocopy items from publications over five years old and with fewer than six copies are not included, it is found that only 40 serial titles have more than 20 photocopy items. However, these 40 serials account for 2,620 photocopy items. Thus, they average about 65 photocopy items each. The results clearly show that only a small proportion of the serial titles have a large number of photocopy items. In fact, the number is not appreciable except with a small proportion of the serial titles.

Table 5.5 DISTRIBUTION OF NUMBER OF SERIAL TITLES AND NUMBER OF PHOTOCOPY ITEMS FOR INTERLIBRARY LOAN REQUESTS, BY CONDITION OF ELIGIBILITY, MINITEX (1976)

(Sample Size 317 Serial Titles)

	Total Number of Photocopy Items Per Serial Title										
Condition of Eligibility	0	1	2	3	4	5	6-10	11-20	21-30	31-40	>40
All Photocopying Items											
Serials	0	1,920	960	520	420	260	1,200	600	180	140	140
Items	0	1,920	1,920	1,560	1,680	1,300	9,600	8,400	4,320	4,760	10,660
	0	1	2	3	4	5	6-10	11-20	>20	-	-
Photocopy Items <6 Years											
Serials	1,665	1,580	740	500	360	220	720	340	220	-	-
Items	0	1,580	1,480	1,500	1,440	1,100	5,760	4,760	9,470	-	-
	0	1	2	3	4	5	6-10	11-20	>20	-	-
Photocopy Items <6 Years and >5 Photocopy Items											
Serials	5,925	0	0	0	0	0	260	120	40	-	-
Items	0	0	0	0	0	0	1,860	1,900	2,620	-	-

SOURCE: King Research, Inc.: MINITEX Data Base

Table 5.6 NUMBER OF REQUESTS BY INDIVIDUAL SERIALS ACROSS 132 LIBRARIES - MINITEX 1976

	No. of Serials	All Photocopy Items	Photocopy Items <6 Years	Photocopy Items < 6 Years and > 5 Photocopy Items
	65	> 60	> 39	> 4.5
	125	> 43	> 27	> 3.5
	315	> 27	> 15	-
	635	> 16	> 9	-
	1270	> 8	> 6	-
Total	6345	51,419	28,114	
Average	-	8.1	4.4	

SOURCE: King Research, Inc.: MINITEX Data Base

The table above may be interpreted as follows. All of the top 65 serial titles have more than 60 photocopy items. Those serials published less than six years ago have at least 39 photocopy items each. Those serials that were published less than six years ago and that have more than five photocopy items have at least 4.5 photocopy items each.

The average number of photocopy items per title with over ten photocopy items is 28.3 photocopy items per title. If one assumes that the 132 MINITEX libraries are typical of the 21,280 libraries found nationally, these 160 serial titles might yield as many as 4,500 photocopy items per title that are eligible for royalty payments. Similarly, 420 titles could yield an average of 2,400 photocopy items per title that are eligible for such payment.

There is some evidence concerning the representativeness of the serials in the MINITEX system that were requested. A publisher survey was conducted for CONTU by Indiana University (3) in which the proportion of journals was estimated for those having fewer than 3,000 subscribers, between 3,000 and 10,000 subscribers and over 10,000 subscribers. A similar distribution was compiled by King Research (4) from data from a study conducted at New York

University (6) and Ulrich's International Periodicals Directory 1975-76 (11). The latter data were gathered from a random sample of scientific and technical journals (4175). The sample of 317 MINITEX serial titles was noted and the number of subscribers looked up in Ulrich's. The number of subscribers was found for 160 serial titles. The distributions of subscribers for these three sources are compared below in Table 5.7.

Table 5.7 NUMBER OF SERIAL TITLES WITH LESS THAN 3,000 SUBSCRIBERS: 3,000 to 10,000 SUBSCRIBERS: AND OVER 10,000 SUBSCRIBERS, FROM THREE SOURCES

Source of Data		Number of Subscribers <3,000	3,000-10,000	>10,000	Total
MINITEX	No. of Serials	76	39	45	160
	Prop. of Serials	.48	.24	.28	1.00
Indiana University	No. of Serials	441	244	253 *	938
	Prop. of Serials	.50	.30	.20	1.00
King Research, Inc.	No. of Serials	2288	1353	534	4175
	Prop. of Serials	.54	.32	.13	1.00

* The Indiana University study did not include serials with greater than 100,000 circulation.

SOURCE: Indiana University; King Research, Inc.: MINITEX Data Base

The distribution of subscribers of the serials found in MINITEX seems to be more like that of the Indiana University serials than that of the King Research serials, although both are reasonably close. One would expect the Indiana University results to be closer since their journals are from a broader range of fields which may more correctly reflect the MINITEX titles.

Contrary to other results (5), it is found that the number of requests per serial title does not appear to be directly correlated with number of subscribers. The number of requests are plotted against number of subscribers (on a square root scale). The number of titles is also given in Table 5.8.

Figure 5.1 NUMBER OF INTERLIBRARY LOANS VERSUS CIRCULATION FOR SERIALS

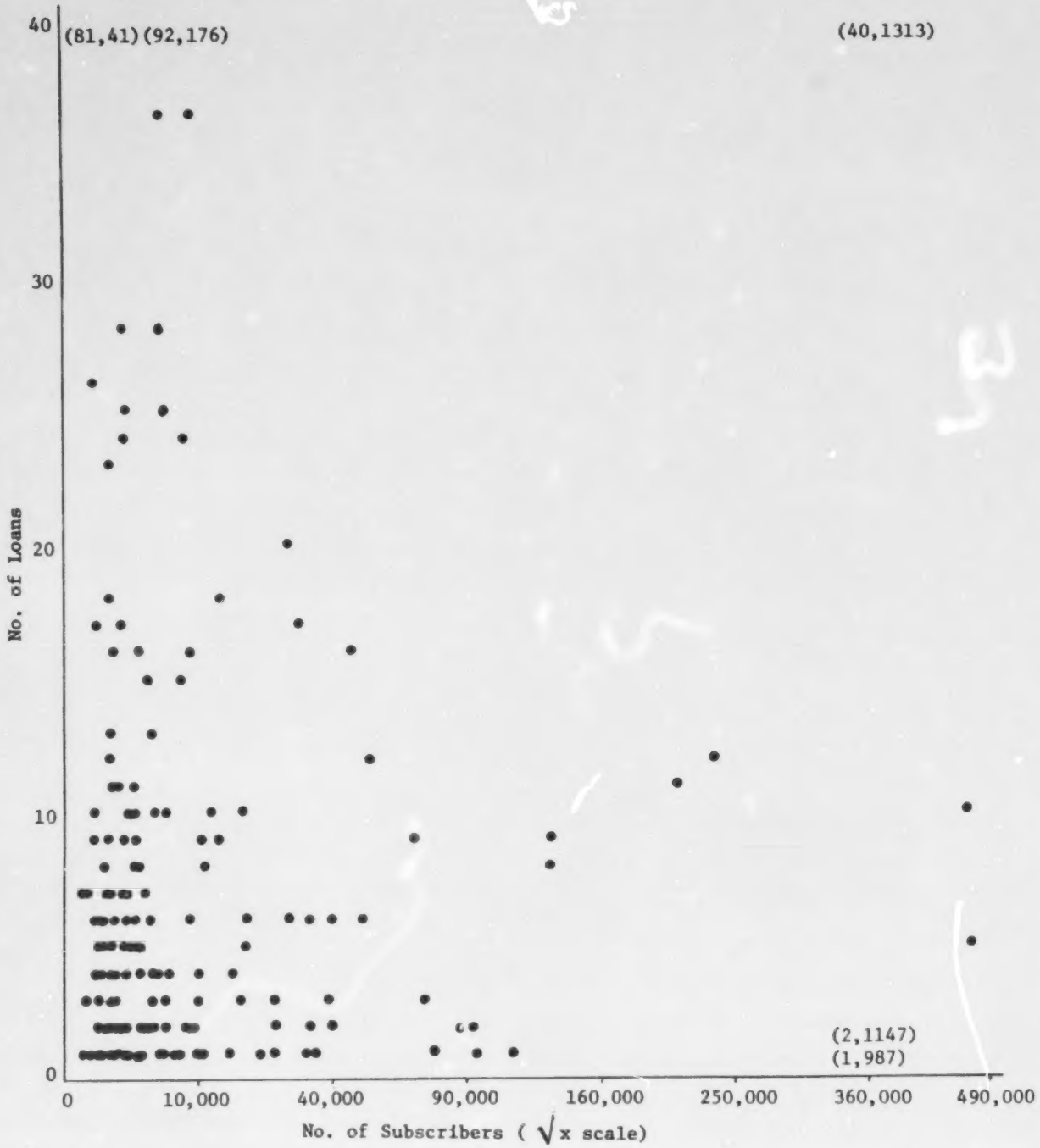


Table 5.8 NUMBER OF TITLES THAT ARE REQUESTED MORE OR LESS THAN 20 TIMES AND HAVE MORE OR LESS THAN 10,000 SUBSCRIBERS-MINITEX 1976

(Sample Size 160 Titles)

No. of Subscribers	No. of Requests ≤20	>20	Total
≤ 10,000	106	11	117
> 10,000	42	1	43
Total	148	12	160

SOURCE: King Research, Inc.: MINITEX Data Base
Ulrich's International Periodicals Directory, 1975-76.

One could characterize this distribution by the following three statements:

(1) The serial titles that have a large number of subscribers (>10,000) tend to have a relatively few number of requests (≤20).

(2) The serial titles that have a large number of requests (>20) tend to have a relatively few number of subscribers (≤10,000).

(3) The serial titles that have a few number of requests (≤20) and few number of subscribers (≤10,000) are uncorrelated.

It is not known whether these results hold for libraries in the remaining parts of the country. However, it does give some evidence as to what publishers might expect.

Of particular interest is the number of serial titles that have various levels of photocopy items summed over libraries. A procedure for making gross estimates for these data has been derived (Appendix C). These estimates are presented here by type of transaction and by various conditions for eligibility of royalty payment. Table 5.9 gives the distribution of the proportion of serial titles that have various levels of number of photocopy items for interlibrary loans.

Table 5.9 PROPORTION OF SERIAL TITLES THAT HAVE VARIOUS NUMBERS OF PHOTOCOPY ITEMS MADE FOR INTERLIBRARY LOAN REQUESTS BY CONDITION OF ELIGIBILITY (1976)

(Proportion of Serial Titles)

Condition of Eligibility	Number of Photocopy Items			
	0-50	51-100	101-500	>500
All Photocopy Items	0.40	0.21	0.32	0.07
< 6 Years	0.51	0.28	0.21	0.00
Replacement/ Classroom and < 6 Years > 5 Copies	0.91	0.09	0.00	0.00

SOURCE: King Research, Inc.: National Library Survey

A very high proportion of serial titles appear to have fewer than 100 photocopy items that are eligible for royalty payment. However, if one assumes a total of 10,000 total serial titles, there are still a number of serials (700) that have over 500 photocopy items for interlibrary loan.

In Section 4, we found that a small proportion of libraries made a very large proportion of photocopy items. Similarly, it is observed that a small proportion of serials account for a major proportion of photocopy items that are prepared for interlibrary loan. These data are given in Figure 5.2 on the next page.

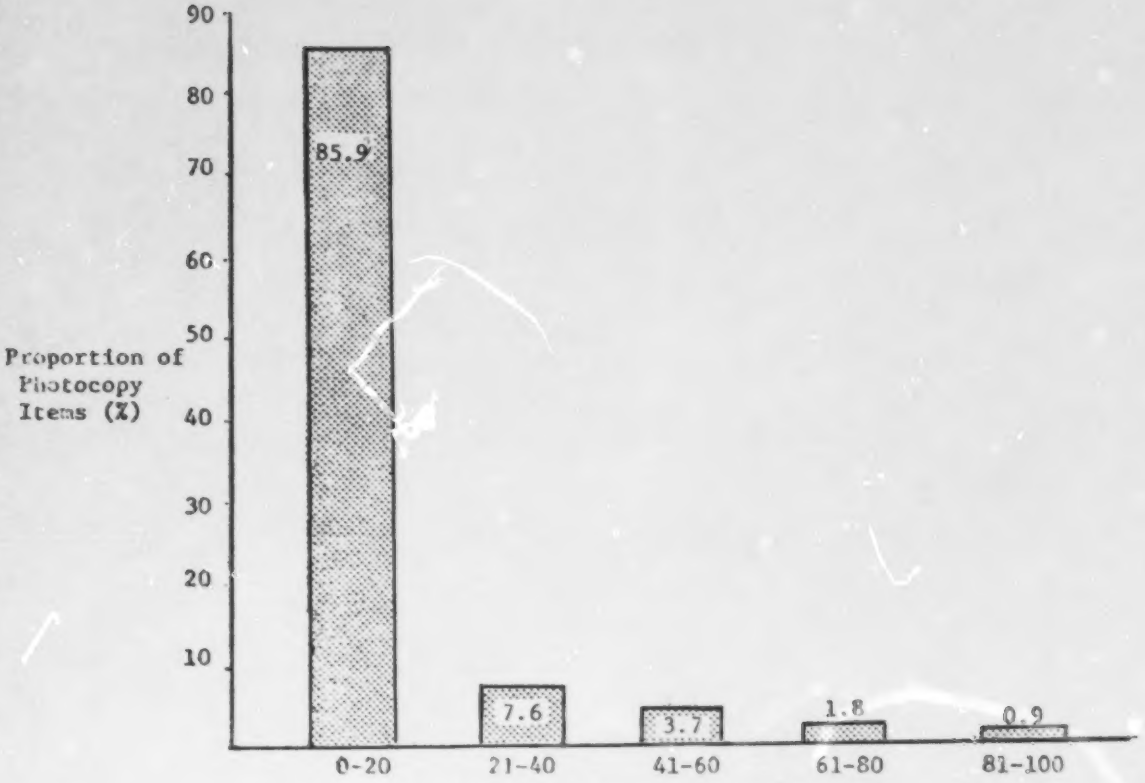


Figure 5.2 Distribution of Serial Photocopy Items for Interlibrary Loan by Proportion of Libraries (1976)

It is roughly estimated that approximately 86 percent of the photocopy items prepared for interlibrary loan are made from only 20 percent of the serials. About four percent of the photocopy items are made from 50 percent of the serials and the remaining 50 percent of the titles account for 96 percent of the photocopy items made for interlibrary loan.

This picture is somewhat different when considering photocopy items made for local users. Only ten percent of the serials will have fewer than 101 photocopy items; thirty-seven percent will have fewer than 501 photocopy items, and one-fifth of the serial titles will have less than 1001 photocopy items.

Table 5.10 PROPORTION OF SERIAL TITLES THAT HAVE VARIOUS NUMBERS OF PHOTOCOPY ITEMS MADE FOR LOCAL USER REQUESTS BY CONDITION OF ELIGIBILITY (1976)

(Proportion of Serial Titles)

Condition of Eligibility	Number of Photocopy Items				
	0-100	101-500	501-1000	1001-5,000	>5,000
All Photocopy Items	0.10	0.37	0.20	0.28	0.05
< 6 Years	0.20	0.50	0.30	0.00	0.00
< 6 Years and >5 Copies	0.24	0.50	0.26	0.00	0.00

SOURCE: King Research, Inc.: National Library Survey

Here, we see that a significant proportion of serial titles will have over 1,000 photocopy items made for local users. In fact, if we assume 10,000 serial titles, there are 2,600 to 5,300 serial titles over 500 photocopy items, depending on the condition of eligibility.

Since there are more photocopy items made for local users, there appears to be a less skewed distribution of photocopying over serials. These data are displayed in Figure 5.3 on the next page.

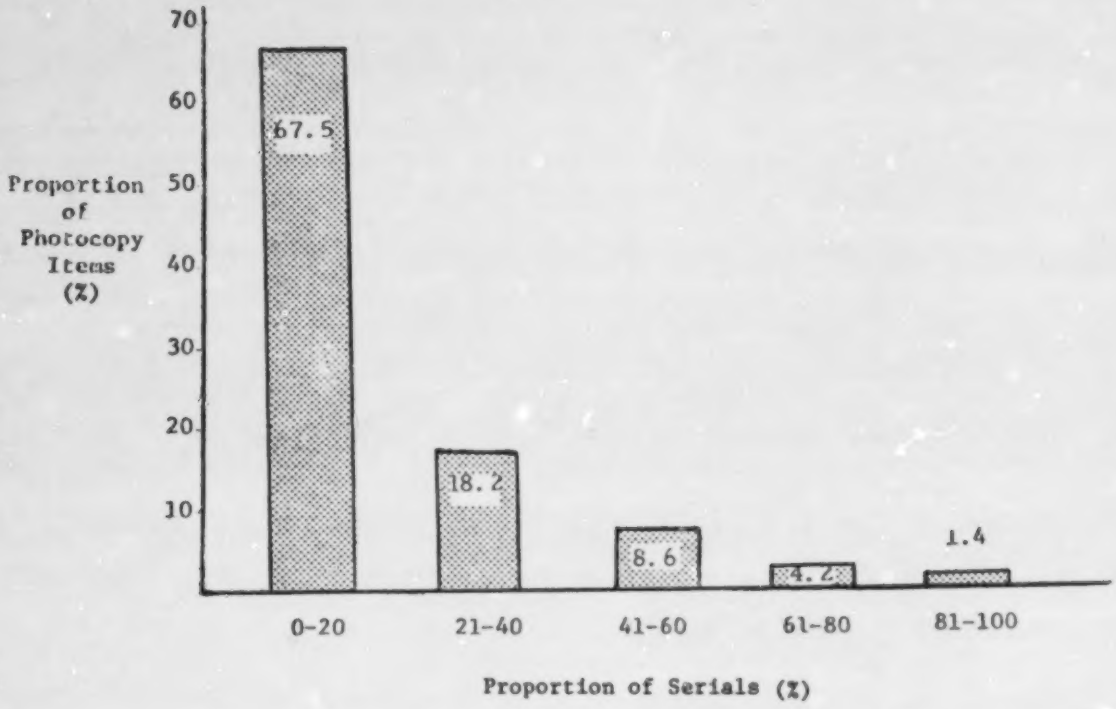


Figure 5.3 Distribution of Photocopy Items for Local Users by Proportion of Serials

It is grossly estimated that 68 percent of the photocopy items made for local users, are prepared from 20 percent of the serials. About ten percent of the photocopy items are made on 50 percent of the serial titles and the remaining 90 percent made on the rest of the serial titles.

Publishers may be particularly interested in data from the distribution of age of transactions. This has two implications. The first matter has to do with the number of royalty payments that might be received for previously published serials of various ages. The second, and perhaps, most important consideration concerns when royalty payments might be made in the future for currently published serials. The reason that this may be important is that the age of royalty payments has implications for cash flow of income. Serials have a preferred financial situation because much of their income is received ahead of expenses, so that the cash flow and return on investment is very favorable. If the Copyright Law results in some cancellations of subscriptions in favor of payment of royalties on photocopies, the advantage of the cash flow of subscriptions will be diminished somewhat.

Table 5.11 DISTRIBUTION OF PROPORTION OF TRANSACTIONS OF SERIAL TITLES BY AGE OF PUBLICATION, BY TYPE OF LIBRARY, BY TYPE OF TRANSACTION (1976)

(Proportion of Transactions)

Type of Library/ Type of Transaction	Age of Serial in Years						
	1	2	3	4	5	6-10	>10
Public							
Interlibrary Loan	.277	.120	.135	.048	.030	.127	.262
Intrasystem Loan	.290	.147	.203	.049	.020	.052	.239
Local Users	.329	.278	.054	.038	.040	.088	.109
Academic							
Interlibrary Loan	.126	.162	.089	.083	.075	.177	.287
Intrasystem Loan	.312	.205	.083	.091	.037	.148	.125
Local Users	.334	.135	.118	.084	.054	.137	.261
Special							
Interlibrary Loan	.246	.165	.060	.113	.093	.197	.126
Intrasystem Loan	.481	.081	.128	.031	.072	.076	.131
Local Users	.453	.162	.080	.051	.057	.099	.099
Federal							
Interlibrary Loan	.289	.219	.082	.093	.022	.095	.200
Intrasystem Loan	.353	.036	.033	.015	.066	.200	.300
Local Users	.384	.170	.144	.080	.039	.117	.070
All Libraries							
Interlibrary Loan	.107	.167	.112	.090	.070	.183	.266
Intrasystem Loan	.352	.140	.131	.055	.043	.101	.178
Local Users	.409	.204	.076	.050	.048	.098	.114

SOURCE: King Research, Inc.: National Library Survey

Table 5.11 DISTRIBUTION OF PROPORTION OF TRANSACTIONS OF SERIAL TITLES BY AGE OF PUBLICATION, BY TYPE OF LIBRARY, BY TYPE OF TRANSACTION 91976) (Cont'd)

(Proportion of Transactions)

Type of Library/ Type of Transaction	Age of Serial in Years				
	11-15	16-20	21-25	26-50	>50
Public					
Interlibrary Loan	.055	.054	.096	.050	.007
Intrasystem Loan	.081	.075	.031	.019	.033
Local Users	.031	.016	.009	.037	.015
Academic					
Interlibrary Loan	.083	.062	.056	.049	.036
Intrasystem Loan	.064	.032	.019	.007	.003
Local Users	.127	.056	.031	.032	.014
Special					
Interlibrary Loan	.056	.025	.026	.019	*
Intrasystem Loan	.036	.032	.016	.047	-
Local Users	.055	.019	.021	.004	-
Federal					
Interlibrary Loan	.065	.055	.008	.048	.024
Intrasystem Loan	.127	.034	.051	.070	.017
Local Users	.028	.026	.004	.002	.009
All Libraries					
Interlibrary Loan	.075	.057	.068	.048	.019
Intrasystem Loan	.067	.046	.025	.025	.015
Local Users	.049	.021	.017	.020	.008

SOURCE: King Research, Inc.: National Library Survey

Evidence of the age distribution for royalty payments is given in Table 5.11. (It is noted that data of use of past publications must be normalized because there were fewer serial titles as time goes back).

As noted in Section 4, in all types of libraries, the interlibrary loans tend to be older than intrasystem loans or local uses when a distinction is made between current (first year) and older publications. Although, this distinction is less pronounced in Public libraries where the library materials tend to be more heavily popular magazines and newspapers rather than scholarly journals which are more frequently photocopied in other types of libraries. In nearly all instances, at least 10 percent of the transactions are over ten years old. Over all interlibrary transactions, 45 percent are over five years old and 27 percent are over ten years old for interlibrary loans; 28 percent are over five years old and 18 percent are over ten years old for intrasystem loans; and 21 percent are over five years old and 11 percent over ten years old for photocopy items made for local users. The age distribution for photocopy transactions is given in Figure 5.4.

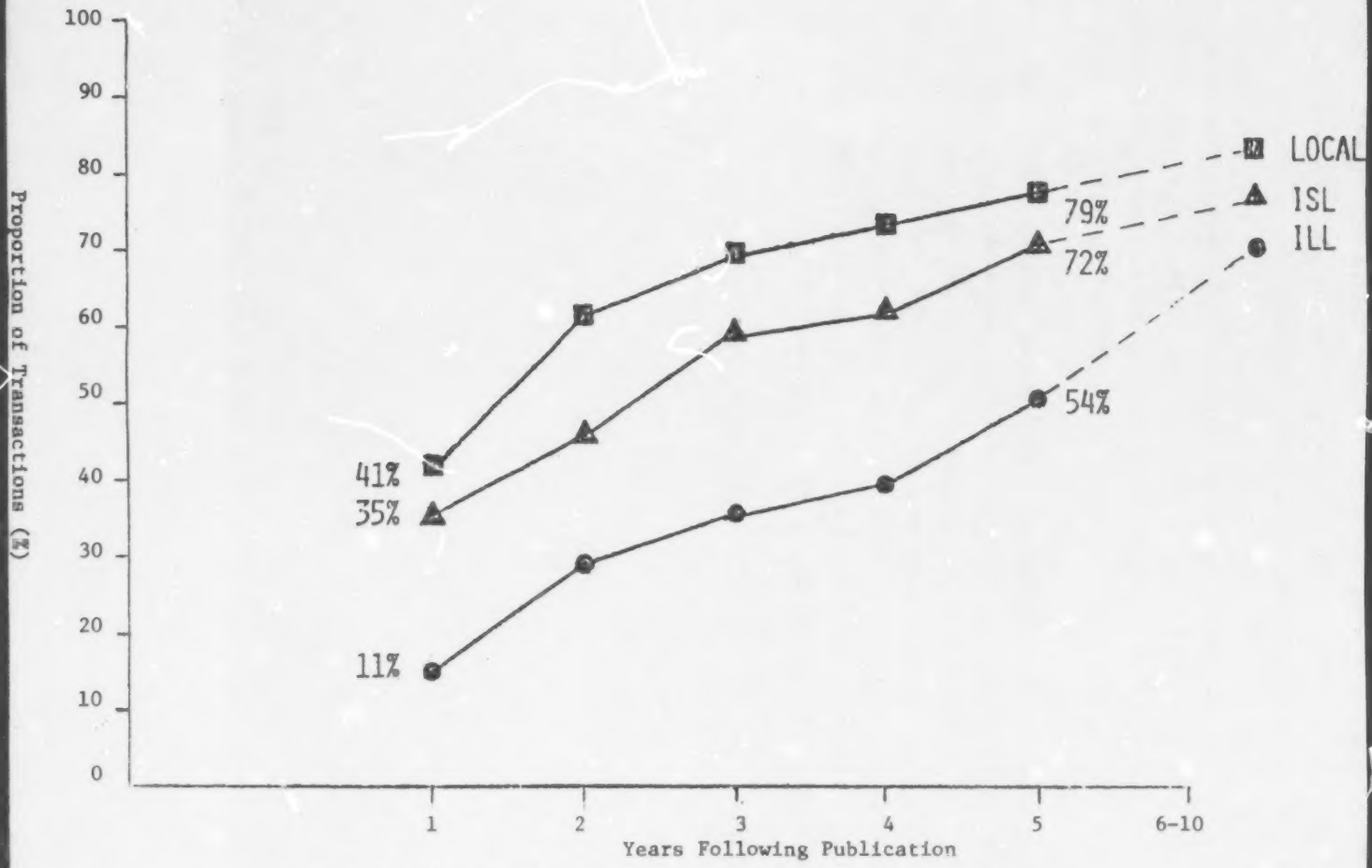


Figure 5.4 Age Distribution of Photocopy Transactions

5.3 Publishers' Preferences

We did not survey a sample of the publishers of the serials whose photocopying we measured in this study, therefore we cannot say with certainty how they might react to specific alternative royalty payment mechanisms. In the study recently completed for CONTU by Fry, White, and Johnson at Indiana University (3), publishers of journals were surveyed regarding their policies for page charges, reprint sales, and their feelings about the possible benefits to be derived from royalty payments for photocopying. Before we discuss the implications of this study, the following points should be noted:

First, the journals and journal publishers surveyed in the Indiana University study came from all fields of study but were primarily "scholarly" and "research" journals, perhaps a narrower category than the serial titles studied by King Research.

Second, as discussed by Fry, White and Johnson, the operational details of specific royalty payment mechanisms, including those considered in this study, the Copyright Clearance Center, and the plans of the National Technical Information Service, were not available to the publishers whom they surveyed during the first five months of 1977. Nor, obviously, were the statistics in this report available to them. Their respondents might have answered some of their questions differently had this information been available to them.

Third, approximately 70% of the Indiana University journals (and 59 percent of their responding journals) were copyrighted. Their findings suggest that there might be differences between the views of publishers of copyrighted serials and the views of publishers of serials which are not copyrighted.

Finally, regarding the implications of the Indiana University study and on our own study of royalty payment mechanisms, the following comments are those of King Research, Inc., and do not necessarily reflect the opinions or conclusions of Fry, White, and Johnson.

Due to the highly skewed nature of the distribution of photocopy items per serial title, it is likely that a minority of serial titles would account for the bulk of royalty payments. Journal publishers in general, as suggested by Fry, White and Johnson, seem to be aware of this, either intuitively or because of insight about the patterns of library photocopying. In fact, many of their respondents expressed concerns about the potential complexities or bureaucracy of a royalty payment mechanism, similar to concerns voiced by librarians.

Nearly 60% of the journals responding in the Indiana University survey sell reprints directly, and about one third sell reprints through an agent. Large circulation ($\geq$10,000) journals are more likely to sell reprints directly (87.8%) than small circulation ($\leq$2,999) journals (56.5%). It is not possible to tell from this how many journals are willing to sell single reprints as opposed to more than one reprint in response to a single order. One of the alternative royalty payment mechanisms considered in Section 6 of this report would require libraries to purchase photocopy items or reprints in excess of fair use and guidelines from individual publishers. These data suggest that this would be more feasible for large serials than for small serials. Another alternative royalty payment mechanism, the purchase of single photocopy items or reprints in excess of fair use or guidelines from a central agency, might be more appropriate for smaller journals which do not currently offer single reprint sales or which might not expect to receive significant royalty income. In fact, of those journals in the Indiana University survey which do offer reprint sales through an authorized agent, a larger proportion of small circulation journals ($\leq$2,999, 50.8%) and medium circulation journals (3,000-9,999, 27.7%) offer such a service than do large circulation journals ($\geq$10,000, 30.6%).

Fry, White, and Johnson report that the majority of journals do not display the International Standard Serial Number (ISSN) -only 36% of the responding journals reported displaying the ISSN in each issue, with small circulation journals being more likely than large circulation journals to display this identification number. Display of the ISSN is essential for a transaction-based royalty payment mechanism. The Copyright Clearance Center is mounting a special effort, with the cooperation of the National Serials Data Program (NSDP)

at the Library of Congress, to convince serial publishers to display the ISSN along with specially-designed individual article coding. Wide-scale display of the ISSN would not only aid in development of a transaction-based royalty payment mechanism but would also aid in ongoing development and utilization of serials data bases, such as the Council of Library Resources-initiated Conversion of Serials (CONSER) project. We should note here that there is at the present time no way to "force" publishers to display the ISSN or individual article coding. Perhaps the possibility of obtaining royalty income through a payment mechanism or some type of government regulation would offer some inducement. With regard to the former, however, data presented elsewhere in this report suggest that the number of publishers which would benefit significantly would be in a minority if many classes of photocopying become exempt from payment.

As noted in the Indiana University study, publishers appear to prefer direct licensing of copying over clearinghouse arrangements for authorizing photocopying. An overwhelming majority of 68.7 percent of responding publishers preferred to license photocopying directly rather than through an agent, clearinghouse, or other method of licensing. This finding is subject to the caveat that the publishers were not presented an example of a specific mechanism to evaluate in the Indiana University survey. Fry, White and Johnson interpret this as an additional argument for a campaign to inform publishers about the existence and advantage of a royalty payment mechanism involving licensing agreements. In addition, we hypothesize that this feeling of publishers might have its roots in publishers' fears of the cost or complexity of such a licensing clearinghouse. On the other hand, publishers might feel that the number of potential licensees would be small enough so that direct licensing would be both feasible and cost effective. Perhaps significantly, publishers' relatively greater preferences for direct licensing are not necessarily shared by librarians, since we found that librarians generally oppose royalty payment mechanisms involving a direct contract between library and publisher.

Publishers of copyrighted journals were asked with respect to specific journal titles in the Indiana University survey what they felt would be "an appropriate payment" if authorized copies were supplied by an agent or clearinghouse.

Surprisingly, more than 50% of the 412 responding journals specified that they would expect a zero payment from such an arrangement. Fry, White, and Johnson speculate that this is due to publishers' preferences for direct mailing or their perceptions of such a clearinghouse as a "convenience mechanism, or ... copying deterrent." When all non-zero publisher responses are considered, a mean payment of $1.44 per copy was obtained, with a minimum of $.05 and a maximum of $9.99. Publishers of copyrighted journals who do not supply authorized reprints were also asked to supply the price they would charge for their supplying of an authorized copy or reprint of an article of up to ten pages for a United States order with accompanying payment. The mean response was $3.09 with a minimum of $.25 and a maximum of $9.99. For publishers who do currently supply reprints, a mean U.S. order price of $3.38 was reported, with a minimum of $.15 and a maximum of $9.99.

These responses do not directly address what portion of payment should be considered to be a "copyright royalty." In the case of publisher sale of reprints, labor and materials costs plus overhead must be covered before a royalty can be obtained. In the case of a sale by a clearinghouse or agent, a transaction or processing cost must be covered in addition to any royalties which would be transmitted to a publisher.

5.4 Photocopying of Scientific and Technical Serials

A large proportion of the serial publishing industry involves scientific and technical materials. This section provides estimates of the amount of photocopying that is performed on scientific and technical periodicals. These data were derived from the titles given on the characteristics forms so that they include only copyrighted serials. The publications are sub-divided by scientific and technical, non-science and newspapers and magazines. These subdivisions are given by type of library and type of transaction in Table 5.12.

Overall, about 64 percent of the photocopied serials are from scientific and technical publications. It is noted that Public libraries have a much smaller proportion of scientific publications photocopied (46%). Academic libraries do 65 percent of their photocopying from scientific and

Table 5.12 NUMBER OF TRANSACTIONS BY TYPE OF PUBLICATION, BY TYPE OF LIBRARY, BY TYPE OF TRANSACTION

(Thousands of Transactions)

Type of Library/ Type of Transaction	Type of Publication			Proportion Science
	Science	Non-Science	Paper/Magazine	
Public				
Interlibrary Loan	802	319	151	.63
Intrasystem Loan	391	443	578	.28
Local Users	2,756	2,040	1,119	.47
Total	3,949	2,802	1,848	.46
Academic				
Interlibrary Loan	1,009	188	58	.80
Intrasystem Loan	930	370	272	.59
Local Users	982	390	306	.59
Total	2,921	948	636	.65
Special				
Interlibrary Loan	755	105	35	.84
Intrasystem Loan	976	174	61	.85
Local Users	4,103	645	476	.79
Total	5,834	924	512	.80
Federal				
Interlibrary Loan	167	6	7	.93
Intrasystem Loan	365	10	<1	.97
Local Users	924	16	146	.85
Total	1,456	32	154	.89
All Libraries				
Interlibrary Loan	2,733	618	251	.76
Intrasystem Loan	2,662	997	852	.59
Local Users	8,765	3,091	2,047	.63
Total	14,160	4,706	3,150	.64
Proportion of Total	.64	.21	.14	

SOURCE: King Research, Inc.: National Library Survey.

technical serials, Special libraries do 80 percent and Federal libraries do 89 percent. There is not quite the disparity among types of transactions. About 76 percent of photocopying of interlibrary loans are from scientific and technical serials, 59 percent of intrasystem loans from them and 63 percent of photocopying for local users from them.

We find that most of the scientific and technical serials are prepared by domestic publishers. Overall, about 70 percent of them are from domestic publishers. However, Special libraries photocopy the highest proportion of foreign serials (43%), and the Federal Libraries' proportion of foreign serials is about 29 percent. In Public libraries, only about one percent of photocopying is from foreign serials. The variation among types of transactions ranges from 19 percent of photocopies from foreign publications for intrasystem loan to 35 percent for local users. These results are displayed in Table 5.13.

Table 5.13 DISTRIBUTION OF PROPORTION OF TRANSACTIONS OF FOREIGN AND DOMESTIC COPYRIGHTED SCIENTIFIC SERIALS BY TYPE OF LIBRARY AND BY TYPE OF TRANSACTION

(Proportion of Transactions)

	Type of Copyrighted Scientific Serial	
	Foreign	Domestic
Type of Library		
Public	.011	.989
Academic	.117	.883
Special	.431	.569
Federal	.288	.712
All Libraries	.301	.699
Type of Transaction		
Interlibrary Loan	.225	.775
Intrasystem Loan	.193	.807
Local Users	.346	.654
All Transactions	.301	.699

SOURCE: King Research, Inc.: National Library Survey.

The age distribution of domestic, copyrighted scientific and technical serials is given in Table 5.14 by type of library and type of transaction. Overall, the age distribution of these serials seems to reflect that observed in Table 5.11 for all serials. However, when foreign, copyrighted serials are considered, it appears that the age distribution is somewhat different. For the most part, for all types of transactions, more of the photocopied serials are younger than domestic serials. These data are displayed in Table 5.15.

Age distribution was also established for the MINITEX data base. All of these responses were coded into the nine NSF fields of science. These data are displayed in Tables 5.16 through 5.18 for Public, Academic and Special libraries respectively. Because the characteristics of scientists and engineers in Minnesota are likely to be different from those in the rest of the U.S., comparison of total number of loans among the fields of science for the MINITEX database is not advised. However, use of the age distributions within a particular field of science by type of library seems reasonable. In Public libraries 26 percent of the loans are for publications over ten years old, Academic libraries 28 percent and Special libraries 15 percent. This is reasonably similar to the national library survey results where Academic libraries were 28 percent and Special libraries 11 percent. However, Public libraries were 40 percent compared to 26 percent in MINITEX.

Across all types of libraries, we find that Mathematics, Environmental Science, and Other Sciences appear to have loans from older publications. These three sciences have between 37 and 39 percent of their loans from publications over ten years old. In Computer Sciences only 19 percent of the loans were from serials over 10 years. All of the remaining sciences and engineering ranged from 22 to 28 percent over ten years old.

Table 5.14 DISTRIBUTION OF PROPORTION OF TRANSACTIONS OF DOMESTIC, COPYRIGHT, SCIENTIFIC SERIAL TITLES BY AGE OF PUBLICATION, BY TYPE OF LIBRARY, BY TYPE OF TRANSACTION

(Proportion of Transactions)

Type of Library/ Type of Transaction	Age of Serial in Years											
	1	2	3	4	5	6-10	>10	11-15	16-20	21-25	26-50	>50
Public												
Interlibrary Loan	.203	.054	.171	.019	.017	.136	.399	.093	.073	.134	.043	.057
Intrasystem Loan	.555	.090	.086	.055	.014	.086	.115	.085	-	.015	.015	-
Local Users	.428	.188	.091	.051	.054	.116	.072.	.019	.014	.005	.026	.009
Academic												
Interlibrary Loan	.118	.147	.097	.101	.068	.192	.276	.086	.076	.066	.024	.024
Intrasystem Loan	.323	.163	.101	.082	.037	.170	.123	.072	.020	.023	.003	.006
Local Users	.296	.109	.150	.057	.060	.154	.173	.082	.052	.024	.014	.002
Special												
Interlibrary Loan	.115	.440	.104	.040	.052	.139	.109	.102	.003	.002	.002	.001
Intrasystem Loan	.367	.236	.070	.052	.039	.082	.153	.029	.042	.010	.071	-
Local Users	.631	.060	.052	.043	.038	.087	.089	.041	.016	.027	.005	.001
Federal												
Interlibrary Loan	.295	.252	.087	.074	.061	.098	.133	.032	.017	.009	.032	.044
Intrasystem Loan	.354	.037	.033	.014	.043	.194	.326	.148	.035	.053	.071	.018
Local Users	.293	.205	.155	.079	.044	.135	.090	.045	.027	.013	.001	.003
All Libraries												
Interlibrary Loan	.152	.190	.119	.063	.050	.159	.266	.088	.056	.068	.025	.030
Intrasystem Loan	.370	.163	.079	.060	.036	.134	.160	.069	.027	.021	.036	.005
Local Users	.512	.108	.083	.050	.045	.106	.095	.041	.021	.020	.010	.002

SOURCE: King Research, Inc.: National Library Survey.

Table 5.15 DISTRIBUTION OF PROPORTION OF TRANSACTIONS OF FOREIGN, COPYRIGHTED, SCIENTIFIC SERIAL TITLES BY AGE OF PUBLICATION, BY TYPE OF LIBRARY, BY TYPE OF TRANSACTION

(Proportion of Transactions)

Type of Library/ Type of Transaction	Age of Serial in Years											
	1	2	3	4	5	6-10	>10	11-15	16-20	21-25	26-50	>50
Public												
Interlibrary Loan	.010	-	.005	-	.469	-	.517	.005	-	-	-	.512
Intrasystem Loan	-	-	-	-	-	-	-	-	-	-	-	-
Local Users	.131	.013	.023	.013	.032	.520	.269	.082	.050	.054	.047	.036
Academic												
Interlibrary Loan	.243	.153	.099	.063	.078	.184	.181	.116	.012	.005	.026	.022
Intrasystem Loan	.213	.125	.099	.042	.146	.290	.085	.027	.057	.001	-	-
Local Users	.592	.091	.051	.041	.026	.102	.097	.056	.013	.012	.008	.007
Special												
Interlibrary Loan	.205	.245	.026	.187	.053	.172	.111	.066	.022	.021	.002	*
Intrasystem Loan	.318	.247	.172	.159	-	.034	.070	.036	.034	-	-	-
Local Users	.415	.206	.121	.041	.066	.092	.047	.024	.007	.014	.001	-
Federal												
Interlibrary Loan	.331	.126	.153	.120	.050	.113	.106	.018	.041	.004	.039	.004
Intrasystem Loan	.498	.054	.062	.028	.152	.150	.057	.027	.028	.001	.001	.001
Local Users	.367	.122	.167	.055	.092	.101	.096	.044	.009	.009	.043	-
All Libraries												
Interlibrary Loan	.034	.224	.110	.148	.089	.206	.181	.097	.027	.013	.026	.025
Intrasystem Loan	.346	.133	.106	.070	.107	.167	.071	.030	.040	*	*	*
Local Users	.424	.200	.120	.042	.066	.096	.052	.027	.007	.014	.003	*

SOURCE: King Research, Inc.: National Library Survey

*Less than one-half of one-tenth of one percent.

Table 5.16 AGE OF INTERLIBRARY LOANS FOR PUBLIC LIBRARIES BY FIELD OF SCIENCE

(Number of Loans)

Field of Science	Year Published 1976	1975	1974	1973	1972	1971	1970	1969	1968	1967	≤1966	Total
Physical Science	2	4	3	3	7	3	4		1	1	27	55
Mathematics		30	19	3		1					5	58
Computer Science	2	4	1	3	1	1	2					14
Environmental Science	6	21	9	12	9	4	8	3	6		46	124
Engineering	12	41	24	15	6	3	7	6	1	2	56	173
Life Science	68	163	160	121	71	51	36	50	28	46	302	1,096
Psychology	7	53	42	39	30	26	17	23	17	11	65	330
Social Science	41	122	110	69	55	48	10	25	15	13	144	652
Comprehensive (All Other)	6	24	17	9	4	2	5	5	1	4	46	123
Total	144	462	385	274	183	139	89	112	69	77	691	2,625

SOURCE: King Research, Inc.: MINITEX database.

Table 5.17 AGE OF INTERLIBRARY LOANS FOR ACADEMIC LIBRARIES BY FIELD OF SCIENCE

(Number of Loans)

Field of Science	Year Published											
	1976	1975	1974	1973	1972	1971	1970	1969	1968	1967	≤1966	Total
Physical Science	204	170	93	78	44	45	31	34	34	25	305	1,063
Mathematics	15	25	14	15	11	9	7	6	3	5	97	207
Computer Science	2	36	22	18	20	12	5	13	9	5	41	183
Environmental Science	28	179	148	88	67	41	65	36	37	26	485	1,200
Engineering	68	223	184	137	73	57	47	32	21	26	375	1,243
Life Science	597	2,437	2,170	1,382	919	683	559	444	361	337	3,640	13,529
Psychology	97	530	561	299	211	169	128	79	88	79	668	2,909
Social Science	368	1,457	1,334	842	538	399	266	216	221	162	1,976	7,779
Comprehensive (All Other)	61	246	172	107	74	63	38	51	39	30	696	1,577
Total	1,440	5,303	4,698	2,966	1,957	1,478	1,146	911	814	695	8,285	29,693

SOURCE: King Research, Inc.: MINITEX database.

Table 5.18 AGE OF INTERLIBRARY LOANS FOR SPECIAL LIBRARIES BY FIELD OF SCIENCE

(Number of Loans)

Field of Science	Year Published											
	1976	1975	1974	1973	1972	1971	1970	1969	1968	1967	≤1966	Total
Physical Science	112	59	40	33	17	19	10	14	14	12	52	382
Mathematics	4	2	3	3	1	1	2	2	2		15	35
Computer Science	14	10	6	8	2	1		2	2	2	7	54
Environmental Science	49	22	18	13	6	9	2	4		4	15	142
Engineering	44	43	33	24	15	9	6	3	7	4	38	226
Life Science	559	365	232	160	100	68	56	28	31	31	230	1,860
Psychology	43	102	47	47	29	34	22	20	17	15	83	459
Social Science	176	228	148	111	88	69	45	38	47	20	224	1,194
Comprehensive (All Other)	46	58	42	31	18	15	11	5	2	3	32	263
Total	1,047	889	569	431	276	225	154	116	122	91	696	4,616

SOURCE: King Research, Inc.: MINITEX database.

SECTION 6

IMPLICATIONS FOR THE DEVELOPMENT OF ROYALTY PAYMENT MECHANISMS

This section is divided into four parts. In 6.1 we describe the factors relevant to the evaluation of alternative royalty payment mechanisms. Section 6.2 lists hypothetical mechanisms developed to serve as examples of several different design aspects.

The feasibility of these alternatives is examined in Section 6.3 in terms of speed, accuracy, transition cost, and operational cost. We summarize our conclusions in Section 6.4.

6.1 Factors to be Considered in Selecting from Among Alternative Royalty Payment Mechanisms

In this section, we describe some factors which should be taken into account in selecting among alternative mechanisms. These factors are presented from the perspective of individual libraries and publishers to aid them in selecting from among alternatives. The purpose of the evaluation is not to make specific recommendations, but rather to point out the advantages and disadvantages, as we see them, to individual libraries and publishers. It appears that certain advantages and disadvantages become important with libraries that have high or low volume eligible photocopying. Similarly, the relative advantages and disadvantages of alternative royalty payment mechanisms vary by the volume of photocopying that is eligible for payment to serial publishers. Therefore, the advantages and disadvantages are presented for libraries with high and low volumes of eligible photocopying and publishers that have serials with high and low volumes of eligible royalty payments. Clearly, it is unlikely that any one single royalty payment mechanism will be universally adapted by all libraries and all publishers. Thus, it would seem to be helpful to libraries and publishers to know their options and what the advantages and disadvantages are for each.

As shown in previous sections, one of the most important constraints, the volume of eligible photocopying, is still an uncertanty. Another important consideration is the need to balance public access to information with the need of copyright holders for a fair return. At the least, the existing segments of the copyright environment (libraries, users, authors, publishers, Federal government, etc.) should be able to absorb the added cost of a royalty payment mechanism. From a different perspective, a shift of resources should occur from one segment to another which would not result in a degradation of existing levels of performance or service for any of the segments. This shift hopefully would result in improvements in performance or service (or increased survivability) for at least one of the segments. Such optimality and social welfare considerations, however, need to be translated into more practical terms. The important question is whether it is feasible to develop a mechanism which will transmit royalty payments to copyright holders in proportion to the amount of library photocopying of individual copyright holders' materials which would be eligible for royalty payments.

The following assumptions should also be kept in mind when reading the following discussion:

- Copyright holders are assumed to be publishers.
- At least initially, royalty payment mechanisms will be concerned chiefly with photocopying of domestic (U.S.) published materials.
- The published material of chief concern to the mechanisms (at least initially) will be serial articles.

These assumptions may only hold over the next few years, but they do simplify the discussion of specific factors that might be used in selecting among alternative royalty payment mechanisms.

Additional factors which need to be taken into account are the following:

The amount of photocopying for individual serial titles.

This is particularly important since a large proportion of serial titles will have a small amount of photocopying and a small proportion of serials will have a substantial number of photocopying items eligible for payment.

The prevailing attitudes of libraries and publishers concerning alternative royalty payment mechanisms.

Clearly, alternative mechanisms must have some degree of acceptance by all parties or they will not be successful. This is especially important in a voluntary mechanism.

The market economic implications of alternative mechanisms.

The payment of royalties will have some economic impact on libraries. They could increase budgets to absorb the payments or require reallocation of their budgets to absorb the costs.

The capability of libraries and publishers to implement alternative mechanisms.

Each mechanism has practical and economic implications for the parties involved and whether they have the capability to implement mechanisms.

The proportion of photocopying at individual libraries which would be eligible for payment.

At some point, individual libraries' liability for payment must be determined. The proportion of photocopying eligible for payment will affect how efficient various measurement techniques will be. The proportion of photocopying that is eligible also has some bearing on the complexity of accounting for the number of eligible photocopy items.

Use of existing payment channels versus development of new payment channels.

The use of existing payment and distribution channels, such as interlibrary loan systems and information retrieval networks, would tend to make start-up and operation of a payment mechanism easier than if a totally new mechanism had to be designed and implemented. On the other hand, there is no guarantee that existing mechanisms could be easily adapted.

Differentiation Between Interlibrary Loan Photocopy and Photocopy for Local Users and Intrasystem Lending

As noted many times in this report, ILL payments would be, under the CONTU ILL guidelines, the responsibility of the requesting library. Thus, a library would not be responsible for the photocopying it does in response to other libraries' ILL requests. Volume estimates by the library or some other party would have to take this into account.

Method used for estimating or counting eligible photocopying.

To determine eligible photocopying volume, census or sampling approaches might be used. This study employed a sampling approach: a sample of libraries and a sample of photocopying within these libraries were observed, and national and annual estimates were projected from these samples. A census approach to determine eligible photocopy items might start with all potentially eligible libraries, and then some method would be applied to record all eligible photocopy items. From the standpoint of royalty payments, a census of all libraries and photocopying would provide the most accurate data. The uncertainty of sampling would be avoided. On the other hand, such a scheme would probably be expensive to operate, especially if the cost to participating libraries is also taken into account. In addition, careful sampling procedures would generate statistically valid data.

Degree to which non-standardization can be tolerated.

Interlibrary loan (ILL) forms have been standardized by the American Library Association (ALA). Photocopying operations and ILL operations within libraries are not standardized. Neither are serial publishers' formats for copyright notice display (although it is noted that standards have been proposed and partially implemented over the years). Any royalty payment mechanism must take into account the current variety of practices. Even though standardization might be initially expensive, it should aim for a reduction in long-run costs. For cost savings to be realized, however, standards for different purposes or operations should be compatible. Examples that might be cited are the standardization of bibliographic data used by abstracting and indexing services and the standardization of article coding such as that proposed for AAP's Copyright Clearance Center.

Relationship between data collection and distribution channels.

Data collection is defined here as the detection of photocopying that requires payment, and the estimation of its volume. A distribution channel is the way materials and payments are transmitted among copyright holders and libraries. If it were possible to combine data collection and distribution channels, or at least make them compatible, operational costs of the payment mechanism might be reduced. On the other hand, a lack of standardization in ordering and billing procedures might negate these savings.

Relationship between transaction level and payment level.

There are several variations of the relationship between transaction level and payment level. Royalty payments to copyright holders might be made on a one-to-one basis to the number of eligible photocopy items. Second, in an intermediate variation, royalty payments might be made on a "sliding scale" roughly related to the number of actual or potential eligible photocopy items. Third, royalty payments might be only indirectly related to the number of eligible photocopy items. The first two require potentially expensive data collection procedures to be developed and implemented. The last variation would be less expensive, but would be less accurate, and would still require the implementation of an accounting and billing operation.

From the above discussion of relevant factors, it should be possible to develop a list of criteria against which alternative royalty payment mechanisms might be compared. Before this is done, however, it is useful to describe the nature of the mechanisms which will be compared for their feasibility. This is best done by describing the functions to be performed by the mechanisms.

The primary function of the royalty payment mechanisms is to facilitate the following six separate "flows" of documents, information, or payments:

1. The flow of requests (orders) for photocopy items from individual to libraries and from libraries to suppliers of photocopy items.
2. The flow of data from libraries to or through a mechanism (and possibly to copyright owners) concerning the volume and characteristics of eligible photocopy items.
3. The flow of payments from libraries to copyright owners based upon the volume and characteristics of eligible photocopy items.
4. The flow of requests for authorizations to copy from libraries to copyright owners.
5. The flow of authorizations to copy from copyright owners to libraries.
6. The actual flow of photocopy items from and between libraries.

The feasibility of a royalty payment mechanism is defined as the degree to which it satisfactorily facilitates the flow of documents, information or payments. In order to evaluate these flows, the following general criteria are proposed:

- Speed
- Accuracy
- Transition Cost
- Operational Cost.

Speed refers to the relative speed with which a request, document, payment, or information about a photocopy item is transmitted between interested parties. One of the most critical components in which speed is important is

the speed of delivery, the time between a user's expression of a request and the time the request is satisfied with an original document or a photocopy item. A mechanism which imposes a delay between the time a request for a photocopy item is made and the time it is received by its user which is greater than the delay experienced in an alternative mechanism is, other things being equal, less desirable than the other mechanism. Another aspect of speed particularly relevant to publishers is the speed of payment, reflecting the time delay between a transaction involving an eligible copy and receipt of payment by the publisher.

Accuracy here refers to the positive correlation between a serial title's eligible photocopying and the payment received by its publisher. Other things being equal, the larger the number of eligible photocopy items, the greater would be the royalty payment to the publisher. Conversely, the smaller the number of eligible photocopy items for which a library is responsible, the smaller would be that library's royalty payments.

Transition Cost refers to the time, effort, and resources necessary to start up a mechanism and thereby make it operational. It is emphasized that transitional cost refers to more than the actual dollar cost of physical activities or facilities. It also refers to the difficult-to-measure time and energy lost to the design and setting up of a mechanism which is at least a step removed from providing the user with a "legal" photocopy and the publisher with a royalty payment. In a sense, this present study is an example of a transitional cost, since it does not contribute directly to either of these goals, but is more useful to the initial stages of planning and the evaluation of alternatives.

Operational Cost refers to the cost imposed upon the participants by administration of the mechanism. Generally speaking, an increase in accuracy may result in increased costs, due to the need for more accurate counting or estimation of eligible transactions. Since royalty payments are assumed to be for value received, they are not included in Transition Cost or Operational Cost.

6.2 Description of Alternative Royalty Payment Mechanisms

For the Copyright Royalty Library Survey, capsule descriptions of alternative royalty payment mechanisms were develcped in order to obtain expressions of libraries' preferences. Based upon responses to this survey and upon further research, King Research developed a revised list of alternative royalty payment mechanisms (RPMs):

RPM-1 Libraries would purchase photocopy items in excess of fair use and guidelines from a central agency. The central agency would transmit payments to publishers.

RPM-2 Libraries would purchase photocopy items in excess of use and guidelines from individual publishers.

RPM-3 Libraries would pay an optional higher subscription price for those serials from which they anticipated making sufficient photocopy items to be eligible for payments.

RPM-4 Libraries would pay higher subscription prices for all serials, in effect paying for a "blanket" photocopying license.

RPM-5 Publishers of high-volume serials would establish direct licensing agreements with libraries which make a high volume of eligible photocopy items.

RPM-6 A central agency or clearinghouse would estimate or measure eligible photocopying volume and would perform accounting and billing operations as well as serving as an agent for publishers.

RPM-7 Libraries would purchase royalty stamps or coupons from a central agency which would then be affixed to photocopy items eligible for payment.

RPM-8 Libraries would pay royalties through existing and developing ILL and document delivery systems.

RPM-9 Libraries would pay a fee for each photocopying machine to a central agency which would then distribute these payments as royalties to copyright owners.

RPM-1, the purchase of excess photocopy items from a central agency, requires a library to determine the point at which fair use or guidelines would be exceeded. At this point, purchase of additional or excess photocopy items would be made from a central agency.

RPM-2, the purchase of excess photocopy items from individual publishers, also requires a library to determine the point at which fair use or guidelines would be exceeded. At this point, purchase of additional or excess photocopy items or reprints would be made from the individual publishers.

RPM-3, optional higher subscription price, would result in a library's identifying those serial titles from which it expected to photocopy in excess of fair use or guidelines. The library would then agree to pay an optionally higher subscription price (set by the publisher) for these serials, thereby obtaining in advance permission to make excess copies.

For RPM-4, blanket higher subscription price, libraries would pay higher subscription prices for all their serial titles, thereby obtaining in advance permission to do excess photocopying.

RPM-5, direct licensing between high-volume libraries and high-volume serials, would involve individual agreements between publishers and libraries concerning royalty payment for photocopy items in excess of fair use and guidelines, agreements which might vary among the various participants. (This alternative is not likely to be relevant to low-volume libraries.)

RPM-6, a central agency for counting, billing, and payment, would perform these functions as an agent for the publishers which were its sponsors. Through some method it would estimate or count the level of eligible photocopying of libraries, and bill or license them accordingly. The Copyright Clearance Center designed by the Association of American Publishers (AAP) is a specific example of some aspects of this alternative.

In mechanism alternative RPM-7, libraries would purchase royalty stamps or coupons from a central agency. Required royalty payments would be stated in the serial. These stamps would be affixed to eligible photocopy items to demonstrate that a required royalty payment had been made. Distribution of payments to publishers might be made in one of two ways. First, a central agency would monitor the volume of stamps affixed to copies from specific serials on a census or sampling basis, and distribute payments to individual publishers based on the data collected in such a monitoring operation.

Second, the central agency would distribute the payments on some other basis, possibly not directly related to the volume of photocopying of specific titles.

RPM-8 involves the payment of royalties through existing systems. Examples of "existing systems" are the following: interlibrary loan networks, document delivery services, both for-profit and not-for-profit (e.g., Institute for Scientific Information, National Technical Information Service, University Microfilms International), and local information brokers and information-on-demand services. Some of these systems already have royalty or licensing agreements in operation, but many do not.

RPM-9, the payment of a photocopying machine fee to a central agency, would require the development of a mechanism to allocate royalty payments proportional to photocopying volume among the various publishers whose serials are photocopied.

In the next section, these hypothetical mechanisms are evaluated. We note that these mechanisms are not entirely independent. An operating mechanism might need to adopt operational details from more than one alternative.

6.3 Comparative Evaluation of Alternative Royalty Payment Mechanisms

As more exemptions and guidelines are established, the screening process to determine whether photocopying is eligible for payment also becomes more complex. If accuracy of payments is important, a transaction-based mechanism, where royalty payments are correlated with per-title copying, is appropriate, other things being equal. If transition cost and operational cost are to be minimized, a limited transaction-based system, possibly using existing payment and delivery channels, appears more appropriate. The trade-offs are somewhat complex, due to the potentially small proportion of libraries and serial titles likely to be involved operationally to a significant degree. In a transaction-based mechanism, the actual number of eligible photocopy items made or requested by a specific library or library system would need to be determined in order for accurate payments to be made. If libraries are completely responsible for this screening,

a burden is placed upon them. A significant variable is the proportion of photocopy items within a given library which would be eligible for royalty payments, as well as the actual number. A large proportion of libraries have indicated that they would not be able to absorb the cost of having to perform such screening for photocopying for their local patrons. In addition, a large proportion of photocopy items made or requested by the majority of libraries would in all likelihood not be eligible for payments. A significant proportion of their added effort would be wasted due to the low proportion of eligible photocopy items.

A good argument can be made for the creation of a central agency which would perform this screening process, as well as the associated accounting, billing, and payment operations. Here again, however, the proportion of eligible photocopy items in a given library is an important factor to consider. If one assumes that the royalty fees paid through such an agency would be its primary support, these royalty fees would have to cover the input and processing costs of a significant number of non-eligible items, which might tend to dilute the royalty payments which would be transmitted to publishers. A better screening of records of photocopy items before they reach the central agency would improve this situation, but this would shift some of the burden back on the libraries.

The purpose of this section is to present a discussion of the relative feasibility of various alternative royalty payment mechanisms. The evaluation criteria related to feasibility are speed, accuracy, transition cost, and operational cost. Each of these complex criteria may contain both quantitative and qualitative elements; this makes it difficult to specify a single "best alternative," so our discussion will center around a comparative or relative analysis of the hypothetical alternatives.

We alluded earlier to the potential shifting of resources among the various segments of the copyright environment which might be brought about by a royalty payment mechanism. Someone must pay the costs associated with the mechanism. Because of this, the evaluation of various mechanisms must take into account the viewpoints of the various parties involved. We have chosen to do this by dividing this section into two parts. In the first part, the mechanisms will be discussed from the viewpoint of libraries; in the second, from the viewpoint of serial publishers.

It is useful to subdivide both libraries and serials publishers into two groups, high-volume and low-volume. High volume libraries and serials are those which account for a comparatively large number of eligible photocopy items. Low-volume libraries and serials are those which account for a comparatively low volume of eligible photocopy items.

Additional considerations in analysis are the distinction between ILL and local user and intrasystem copying, and the still-unresolved questions regarding limitations on local user and intrasystem loan copying. Finally, the treatment of ILL copies older than 5 years and non-U.S. copyrighted serials is not discussed here. We note that coverage of these categories would tend to increase the number of photocopy items eligible for royalty payments.

6.3.1 Low-Volume Libraries

The majority of libraries in the United States have a comparatively small number of photocopy items of copyrighted domestic serials which might be eligible for royalty payments. The following is a discussion of the relative feasibility of the hypothetical alternative royalty payment mechanism from the standpoint of the general criteria: (1) speed of delivery of eligible copies to a requester; (2) the accuracy of the royalty payment in relation to the actual volume of eligible photocopy items; (3) the transitional cost; and (4) the operational cost (excluding the actual cost of royalty payments).

6.3.1.1 RPM-1: Purchase of Excess Photocopy Items from a Central Agency

Speed of Delivery

RPM-1 would have a minimal impact on low-volume libraries, due to the low number of photocopy items which would be eligible for payment. ILL would not be materially affected. Other eligible photocopy items (e.g., local user and intrasystem loan requests) might be delayed due to the necessity for going to other libraries, but again, the small number would not be a significant detriment except for requesters who required their photocopy items quickly.

Accuracy

Assuming that excess photocopy items are purchased from a central agency, RPM-1 would be highly accurate in matching a library's royalty payments with the actual number of photocopy items it needs in excess of fair use and guidelines set forth by CONTU.

It is worthwhile to mention here that users would not necessarily have to go through the library to obtain photocopy items from the central agency; it is conceivable that direct orders from the user to the central agency could be made, as is possible with some document delivery services. Whether or not low-volume libraries would be inclined to shift this responsibility onto their users is unknown.

Transition Costs

The transition cost for RPM-1 for the low-volume library might be significant for that library depending upon the proportion of photocopy items made or requested which would be eligible for payment, and dependent upon the amount of screening to identify eligible photocopy items. If the proportion of eligibles is low, and the screening process is simple, the transition cost should not be significant. The major variable will be local user and intra-system request photocopy items, since interlibrary loan files are more adaptable to screening for eligibles than the somewhat more informal non-ILL copying operations.

Operational Cost

The operational cost of RPM-1 for low-volume libraries might be significant, depending upon the proportion of photocopy items eligible for payment and the screening process required. This is because some means must be achieved in the library to screen for eligibility. However, we should note here that, if speed of delivery can be guaranteed, and if costs are competitive, the operation of a central agency for providing excess copies conceivably might benefit the low-volume library by providing quick access to a large central

file for ILL and local user and intrasystem requests. In this sense, RPM-1 would be functioning as much more than a royalty payment mechanism for the low-volume library. In other words, it might be cheaper for the low-volume library to order a significant proportion of copies from RPM-1 rather than perform the screening operation. Overcoming the inherent delay in such a system might be a major obstacle, however.

6.3.1.2 RPM-2: Purchase of Excess Photocopy Items from Individual Publishers

Speed of Delivery

For low-volume libraries, RPM-2 might have a slightly more serious impact on the speed of delivery of requested items. Ordering requested photocopy items exceeding fair use or guidelines from individual publishers would be facilitated by standardized ordering and fulfillment procedures, standardization which does not currently exist with respect to reprint or subscription sales. (This is one case where development of a new centralized agency might outweigh the benefits of using existing channels.) Since low-volume libraries by definition would be infrequent sources of orders, setting up deposit accounts might not be feasible with individual publishers; such accounts might otherwise speed delivery.

Accuracy

Accuracy of RPM-2 for low-volume libraries would be high. Their payment to indivdiual publishers for orders would probably include royalty fees. Publishers could tie those directly to the volume of photocopy items ordered.

Transition Cost

Transition cost for RPM-2 for the low-volume library would be slightly more than RPM-1, since the library will have to develop procedures for dealing potentially with several publishers as well as develop the screening process to identify excess photocopy items. The transition cost attributable to dealing with several publishers would probably not be significant, however, due to the low number of eligible requests for copies.

Operational Cost

Operational cost for RPM-2 for low-volume libraries would be slightly more than RPM-1, due to dealing with several publishers. Again, however, the significant cost component would be the screening process, not the ordering process. However, ordering from multiple sources presents some added costs.

6.3.1.3 RPM-3: Optional Higher Subscription Price

Speed of Delivery

Assuming the accurate identification of serials from which excess photocopy items would be made, speed of delivery will not be affected by RPM-3 for the low-volume library. Mis-identification of titles for the low-volume library would not be too serious a problem, due to the library's overall low volume of eligible photocopy items.

Accuracy

RPM-3 would not be as accurate as a transaction-based system which involved library payment on an actual or estimated per-photocopy item basis. Accuracy might not be directly related to the library's actual volume, but possibly to some other statistic such as number of subscriptions, annual volume of exposures, or number of paper-to-paper photocopying machines. If a low-volume library paid for a subscription price option, then made fewer than expected photocopy items, it might feel it was over-paying.

Transition Cost

The low-volume library would have to identify the serial titles eligible for the RPM-3 subscription price option. The cost of this might be significant depending upon how accurate this determination would have to be. Because of the low-volume of eligible photocopy items, however, it is conceivable that a librarian with close familiarity with the use of serial titles would be readily able to identify the eligible titles, especially if (eventual) guidelines for local user and intrasystem request photocopy items are easy to implement.

Operational Cost

The RPM-3 operational cost for the low-volume library would be minimal, depending largely on the type of on-going monitoring necessary to guarantee compliance with the option agreement.

6.3.1.4 RPM-4: Blanket Higher Subscription Price

Speed of Delivery

RPM-4 would not decrease speed of delivery for the low-volume library.

Accuracy

Photocopying from individual titles may vary significantly among different libraries paying the same royalty surcharge for those titles, so a possible inequity (as compared with transaction-based mechanism) might develop. Also, the majority of the low-volume library's photocopying would probably not be eligible for royalty payment; this might result in overcharging for low-volume serial titles. The seriousness of this, of course, would depend upon the structure of the royalty surcharge payment schedule.

Transition Cost

For the low-volume library, transition cost for the RPM-4 would be minimal. Slightly more paperwork might be necessary at the beginning if subscription agreements need to be in the form of a legally-based licensing agreement. (This would also hold for RPM-3.)

Operational Cost

Other than the higher subscription charges, current photocopying and interlibrary loan operations could continue with no significant increase in operational cost due to RPM-4.

6.3.1.5 RPM-5: Direct Licensing Between High-Volume Libraries and High-Volume Serials

This alternative is not likely to be relevant to low-volume libraries. In this alternative, publishers and libraries would make individual agreements concerning royalty payment for photocopy items in excess of fair use and guidelines, agreements which might vary among the various participants. The cost may not justify the means.

6.3.1.6 RPM-6: Central Agency for Counting, Billing, and Payment

One example of this type of mechanism is the Copyright Clearance Center (12).

Speed of Delivery

The low-volume library's speed of delivery of payment-eligible photocopy items to requesters would not be affected, since the purpose of this mechanism is to relieve libraries of as much of the burden of accounting as possible. (This assumes that it would be cost-effective from the publishers' viewpoints for the central agency to monitor low-volume libraries' photocopying.)

Accuracy

Accuracy would be high to moderate, depending upon how the low-volume libraries' eligible photocopy items were screened. A transaction-based mechanism, in which all eligible photocopy items were recorded, would be the most accurate. A modified transaction-based system, based on a sampling of libraries stratified by various copying-related characteristics, would be less accurate, but possibly cost-effective from the central agency's point of view due to the large number of low-volume libraries necessary to deal with in a minor way.

Transition Cost

Transition costs for RPM-6 for low-volume libraries would be minimal, under the assumption that they would have little need for contact with the central agency.

Operational Cost

Again, minimal for low-volume libraries. As mentioned earlier in this section, actual costs depend greatly upon how much of the screening burden is borne by libraries. It might be even less expensive to perform the screening and counting at the Agency except where the proportion of exempt photocopy items is high.

6.3.1.7 RPM-7: Royalty Stamps or Coupons

Speed of Delivery

RPM-7 would not significantly affect the speed of delivery of requested photocopy items.

Accuracy

Assuming the low-volume library did not over-buy or under-buy the stamps or coupons, affixing stamps to photocopy items would be a very accurate way to decrement the pre-paid "account" which consisted of the stamps. (Note that accuracy here refers only to the accuracy of the library's payments being related to the volume of photocopying, not to the accuracy with which serial publishers would receive royalties for photocopying of their serials.)

Transition Cost

Other than the initial purchase price of the stamps, transition would not be costly, except for the expense of developing a screening operation to identify the photocopy items to which the stamps would have to be affixed.

Operational Cost

Operational costs for the low-volume library would be minimal.

6.3.1.8 RPM-8: Payment of Royalties Through Existing Systems

Speed of Delivery

Speed of delivery for the low-volume library would not be affected for interlibrary loan requests. Some delay might be experienced with requests for local users and intrasystem requests, as in RPM-1 and RPM-2.

Accuracy

This would be dependent upon the financial arrangement with the system. For example, a small library might contract with a local information broker for the provision of photocopy items not in that library's local collection. The library's bill would presumably include a percentage covering royalty payments.

Transition Cost

For low-volume libraries, transition cost for interlibrary loan would be minimal. For local user and intrasystem loan photocopying, transition costs are dependent upon the type of system which would be developed or adopted. The existing ILL networks in the U.S. might not be appropriate for handling non-ILL copying. Therefore, some transition costs might be passed on to libraries.

Operational Cost

For low-volume libraries, the cost for RPM-8 would be minimal.

6.3.1.9 RPM-9: Payment of Photocopying Machine Fee to a Central Agency

Speed of Delivery

RPM-9 would have no impact on speed of delivery.

Accuracy

The accuracy of RPM-9 would depend upon the way in which the photocopying of individual serial titles is estimated. The collection of machine fees would probably have to be separate from the estimation of relative photocopying volume, since automatic recording of individual transaction data such as title, publisher, page, etc., is not economically feasible at this time. Assuming that the low-volume library would pay a low machine fee, however, accuracy may not be an issue if low-volume libraries are willing to trade off accuracy (on a per-title basis) for ease of mechanism administration. Also, this alternative would not directly address the distinction between interlibrary loan photocopying and photocopying for local users or in response to intrasystem requests.

Transition Cost

For the low-volume library, transition costs for RPM-9 would be minimal. An exception might be the small libraries which do not have control over their own photocopying machines; these might require somewhat more complex accounting or payment operations.

Operational Cost

Operational cost for RPM-9 would be minimal for the low-volume library.

6.3.2 High-Volume Libraries

A minority of libraries in the United States account for a large proportion of photocopying of copyrighted domestic serials which might be eligible for royalty payments.

6.3.2.1 RPM-1: Purchase of Excess Photocopy Items from a Central Agency

Speed of Delivery

For a high-volume library - say, a large academic library which does a large volume of copying for local users and in response to intrasystem loan requests - speed of delivery would suffer if exess photocopy items were purchased from a central agency. This would be especially true if the library had a traditionally fast turnaround time on requests. In addition, the requests experiencing delay might be shifted into a seasonal variation, due to high-volume titles running out of "free" photocopy items early in the calendar or academic year.

Accuracy

Accuracy for high-volume libraries of RPM-1 would be high.

Transition Cost

Transition costs for high-volume libraries would be significant, for two reasons: screening operations would have to be developed to identify excess photocopy items, and ordering operations (perhaps similar to outgoing ILL requests) would have to be developed for excess local user and intrasystem loan requests.

Operational Costs

High-volume libraries' operational costs for RPM-1 would be signficant, due to the two operations mentioned above. However, as noted for low-volume

libraries, a balancing factor would be the transfer of photocopying operations out of the library to an agency specifically designed for that purpose. Record-keeping within the library for non-ILL photocopying would still have to be developed to keep track of "excess" requests awaiting fulfillment.

6.3.2.2 RPM-2: Purchase of Excess Photocopy Items from Individual Publishers

Speed of Delivery

RPM-2 would have a major negative impact on speed of delivery due to high-volume libraries' requests' possible clustering around high-volume serial titles; speed of delivery would be degraded for just those serial titles which generated most demand. In addition, individual publishers' reprint operations might not operate as quickly or efficiently as the centralized RPM-1.

Accuracy

RPM-2 accuracy for high-volume libraries would be high.

Transition Cost

Transition cost for this alternative mechanism for high-volume libraries would be more than RPM-1, since ordering operations to deal with single publishers would have to be developed.

Operational Cost

Operational costs would be somewhat greater than for RPM-1, due to the need to deal with individual publishers. Screening operations would need to be conducted, and files of requests maintained, updated, and purged.

6.3.2.3 RPM-3: Optional Higher Subscription Price

Speed of Delivery

There would be no impact on speed of delivery if serial titles were properly identified from which excess photocopy items would be made. There might be some delay if mis-identified titles resulted in special requests being made to publishers, but efficient methods could be developed to deal with this potential "mid-stream" problem.

Accuracy

RPM-3 would not be as accurate for high-volume libraries as a transaction-based mechanism. It would, however, be more accurate than RPM-4, Blanket Higher Subscription Price (q.v.).

Transition Cost

For a high-volume library concerned with accurate payments (and the avoidance of possible legal entanglements) the transition cost of identifying and marking special titles, plus the cost of possible internal monitoring operations, might be significant.

Operational Cost

Operational costs for RPM-3 would be minimal to moderate, depending upon the need to monitor the copying volume status of individual serial titles.

6.3.2.4 RPM-4: Blanket Higher Subscription Price

Speed of Delivery

RPM-4 would not result in an impact on speed of delivery.

Accuracy

RPM-4 would be less accurate than RPM-3 (which is tailored to concentrate on specific titles) and much less accurate than a transaction-based mechanism since some degree of overpayment and underpayment by subscription is inevitable.

Transition Cost

Transition costs for RPM-4 would be minimal for high-volume libraries, unless each serial with a higher subscription price required special paperwork to form a legally-based licensing agreement.

Operational Cost

Operational costs for RPM-4 would be minimal, when the increase in price is not considered.

6.3.2.5 RPM-5: Direct Licensing Between High-Volume Libraries and High-Volume Serials

Speed of Delivery

Since the terms of these licensing agreements would be presumably left up to the participants in RPM-5, there is an opportunity here for copying licenses which would not result in a reduction in delivery speed. Licensing agreements which require special permissions (say, for especially large copying runs) might produce some delay.

Accuracy

This is totally dependent upon the nature of the licensing agreements. Some publishers will prefer transaction-based mechanisms, and some libraries may be able to provide data on a per-title basis.

Transition Cost

For high-volume libraries, the transition cost for RPM-5 would be significant if licensing agreements needed to be negotiated within a limited amount of time with numerous publishers.

Operational Cost

The operational cost for high-volume libraries would depend upon the nature of the licensing agreements. Transaction-based mechanisms requiring screening and counting would be the most expensive.

6.3.2.6 RPM-6: Central Agency for Counting, Billing, and Payment

An example of a central agency is the Copyright Clearance Center designed by the AAP (12).

Speed of Delivery

RPM-6 would have no impact on speed of delivery for high-volume libraries.

Accuracy

The accuracy of RPM-6 for high-volume libraries would be high to moderate, depending upon how eligible photocopy items would be screened. A strict transaction-based mechanism, in which all eligible photocopy items were recorded, would be most accurate. A sampling approach would be somewhat less accurate, but possibly more cost-effective to libraries on the average.

Transition Cost

Transition costs would be high for the high-volume library if the library were responsible for significant portions of the screening operation.

Transition costs would be low if such screening were the responsibility of the central agency. There are many variations possible depending upon the way data are transmitted to the central agency, which might significantly affect the way photocopying or interlibrary loan operations would be managed in the high-volume library.

Operational Cost

Operational costs for the high-volume library depend upon the counting or estimating methods adopted by the central agency. If the proportion of exempt photocopies is low, the Agency might be able to screen and count at a low cost, relieving the large libraries of this burden.

6.3.2.7 RPM-7: Royalty Stamps or Royalty Coupons

Speed of Delivery

The use of such stamps or coupons sold by a central agency for use by a high-volume library might result in a slight delay in delivery simply because of a slight increase in request processing time.

Accuracy

As with low-volume libraries, affixing stamps to eligible photocopy items would be an accurate way for decrementing the prepaid account.

Transition Cost

The development of a screening operation to identify eligible photocopy items would probably be more costly than the initial purchase of stamps, excluding the cost of royalty payments per se.

Operational Cost

For a high-volume library, a stamp approach may not be the most cost-effective way to pay royalties, simply because of the slight increase in operational paperwork and complexity which the stamp approach might bring about. Again, the screening operation for the identification of eligible photocopy items would probably be more expensive than the actual use of stamps, coupons, or meters.

6.3.2.8 RPM-8: Payment of Royalties Through Existing Systems

The use of existing or developing state, multi-state, or national ILL networks would greatly simplify royalty payments for eligible ILL photocopy items. However, such systems would not be useful for local user and intra-system loan copy payments without a great deal of modification and standardization. For document delivery services operated outside of or in conjunction with library operations, which already charge for their photocopying services, royalty payments could be included as a portion of the library's service charge.

Speed of Delivery

Use of existing ILL and document delivery systems would not decrease delivery speed unless in-house copying by high-volume libraries was curtailed.

Accuracy

The accuracy of such systems is potentially high, especially for those services which already charge on a per-document basis.

Transition Cost

For the high-volume library, the transition cost for RPM-8 for ILL would not be significant, assuming that the ILL system would do the screening. For local user and intrasystem loan copying, the transition cost would depend

upon the proportion of photocopying which was done by the system or operation which would be responsible for the royalty payment. If all payment-eligible photocopying were done by an outside organization which was responsible for the photocopying, then the transition cost would be minimal.

Operational Cost

Assuming that screening and counting operations were performed for the high-volume library, the operational cost would be low.

6.3.2.9 RPM-9: Payment of Photocopying Machine Fee to a Central Agency

Speed of Delivery

RPM-9 would have no impact on the speed of delivery of photocopy items by high-volume libraries.

Accuracy

As noted for low-volume libraries, accuracy would be difficult to achieve for RPM-9. This might be of some consequence for the high-volume library, since over-payments of royalties (in comparison with other alternatives) would be a definite concern.

Transition Cost

Transition costs for high-volume libraries would be minimal, unless high-volume libraries were required at the beginning to estimate accurately the expected volume of eligible photocopy items they might produce in order to qualify for a specific fee level graduated by eligible photocopying volume.

Operational Cost

RPM-9 operational cost for the high-volume library would be minimal.

6.3.3 Low-Volume Serials

A majority of copyrighted domestic serials can be characterized as low-volume. That is, the majority of serials accounts for a relatively small proportion of photocopy items eligible for royalty payment. The following is a discussion of the relative feasibility of the hypothetical alternative royalty payment mechanisms from the standpoint of the general criteria: (1) speed of payment for eligible photocopy items which are made by U.S. libraries; (2) the accuracy of the royalty payment in relation to the actual volume of eligible photocopying; (3) the transition cost borne by the serial publisher; (4) the operational cost borne by the serial publisher. (Note that potential royalty incomes are not discussed in detail here; we deal primarily with the practical feasibility of the development and operation of the mechanism.)

6.3.3.1 RPM-1: Purchase of Excess Photocopy Items from Central Agency

Speed of Payment

In RPM-1, royalty payments would be collected by a central agency in the course of selling photocopy items. These payments would then be transferred to the serial publisher in the form of a check after some period of time. In other words, there would be some delay coupled with the central agency's normal accounting period. Low-volume serials, by definition, have on the average relatively low eligible photocopying. This also might affect the frequency with which royalty checks are transmitted to the publishers of low-volume serials.

Accuracy

RPM-1 accuracy would be high, since presumably the payments transmitted to the serial publisher would be directly related to the number of photocopy items purchased.

Transition Cost

For RPM-1, a central file of serial originals would be maintained which could be duplicated upon demand. The contribution to this central file would determine the low-volume serials' transition cost.

Operational Cost

Assuming that the central agency could be self-supporting through fees and/or royalty payments, the low-volume serials' operational cost for RPM-1 would be minimal.

6.3.3.2 RPM-2: Purchase of Excess Photocopy Items from Individual Publishers

Speed of Payment

The speed of payment would be high, since payment would arrive with an order or during the course of a normal billing cycle.

Accuracy

RPM-2 accuracy for the low-volume serial would be high, since each transaction would require payment.

Transition Cost

The transition cost for RPM-2 for a low volume serial should be low to moderate, since many publishers already sell reprints or authorize reprint sales through an agent or another publisher. Marketing the service directly to libraries, however, could be expensive, out of proportion to the low volume or orders which might be generated.

Operational Cost

Actual operational costs for low-volume serials should not be significant due to the relatively low number of photocopy items which would actually be eligible for royalty payment.

6.3.3.3 RPM-3: Optional Higher Subscription Price

Speed of Payment

There is a substantial long-range financial advantage to publishers for them to obtain a royalty return through increased subscription prices since the income will occur before expenses are incurred. The age of photocopied materials can be quite old so that income is delayed by that amount. This advantage is probably greater for low-volume serials than for high-volume serials.

Accuracy

RPM-3 for low-volume serial titles for which this option was selected would have low to moderate accuracy, depending on how closely "tuned" the royalty surcharge was to the library's expected volume of photocopy items in excess of fair use and guidelines.

Transition Cost

For low volume serials, the transition cost would be moderate, since an additional subscription price category would need to be provided. In addition, written subscription agreements or licenses might be required by the publisher. Finally, this option does not directly provide for a monitoring of photocopying to determine such facts as over-copying of a title for which a library has not paid the optional surcharge.

Operational Cost

Operational costs to the low-volume serial publisher would be minimal for RPM-3, unless a monitoring operation were selectively instituted.

6.3.3.4 RPM-4: Blanket Higher Subscription Price

Speed of Payment

Same considerations as RPM-3.

Accuracy

RPM-4 might be less accurate than RPM-3 since all the low-volume serial's institutional subscribers would pay the higher subscription price, thereby giving them permission to photocopy in excess of fair use and guidelines. If the publisher related prices to some measurement of library size, it is conceivable that some libraries would pay the same royalty payment while making significantly more or fewer photocopy items than another library within the same payment category.

Transition Cost

Transition cost for the low-volume serial would be minimal.

Operational Cost

Operational costs for this alternative would be minimal, unless blanket increases in subscription prices inclined libraries to respond by dropping low-volume serials.

6.3.3.5 RPM-5: Direct Licensing Between High-Volume Libraries and High-Volume Serials

This alternative is not practical for low-volume serials.

6.3.3.6 RPM-6: Central Agency for Counting, Billing, and Payment

An example of RPM-6 is the Copyright Clearance Center designed by the AAP (12).

Speed of Payment

For low-volume serials, speed of payment through RPM-6 would depend upon its accounting period. Due to the low-volume status of the serial, payments might be infrequent (in relation to high-volume serials), and therefore delayed until some time after the actual eligible copy was made.

Accuracy

Accuracy of RPM-6 would be high to moderate, depending upon the counting method used. A sampling approach to estimating the number of eligible photocopy items for low-volume serials were such an approach to be employed, would need to be very carefully designed in order to make accurate estimates for the majority of serials which are low-volume. A census of all libraries which photocopy would be much more accurate.

Transition Cost

For the low-volume serial, the transition cost for RPM-6 would be minimal, depending upon the initial investment required of participants for development of the central agency. It might be necessary for copyrighted serials to place special article coding on the first page of articles for which it would require royalty payments.

Operational Cost

The operational costs for RPM-6 for low-volume serials would be minimal.

6.3.3.7 RPM-7: Royalty Stamps or Royalty Coupons

Speed of Payment

The speed of payment would depend upon the agency selling the royalty stamps, and upon how it determines royalties are to be distributed to the publishers for which it is a licensing agent.

Accuracy

Accuracy would depend chiefly upon how the central stamp agency determined how royalties are distributed. With low-volume serials, accuracy would be relatively expensive to achieve, due to the low and infrequent volume of eligible photocopy items.

Transition Cost

For the low-volume serial, RPM-7 transition costs would be low, depending for the most part on the type of contribution (financial or otherwise) which would be made to the central agency.

Operational Cost

Operational costs would be minimal, assuming that operational costs for RPM-7 would be allocated to serial publishers in proportion to the volume of eligible copies for which their serials accounted.

6.3.3.8 RPM-8: Payment of Royalties Through Existing Systems

Speed of Payment

Since all existing systems (except many publishers' sale of reprints) interpose an extra step or agency between the responsible library and the serial publisher, RPM-8 would result in some delay in payment.

Accuracy

Existing systems which utilize payment systems based on units of service (or documents provided) would be able to provide highly accurate payments, but only for the eligible photocopies which they handled.

Transition Cost

For low-volume serials, transition costs would be moderate, chiefly composed of having to set up agreements and rate structures with existing systems such as ILL networks, document delivery services, and information brokers.

Operational Cost

RPM-8 operational costs for low-volume serials would be minimal.

6.3.3.9 RPM-9: Payment of Photocopying Machine Fee to a Central Agency

Speed of Payment

Since a central agency would be established to collect and distribute machine fees, some delay in payment would occur.

Accuracy

Accuracy in recording and transmitting payments for eligible photocopy items of low-volume serials would be difficult to achieve through RPM-9 without some method of obtaining fairly detailed data on photocopy items per title distributions.

Transition Cost

A central mechanism or agency would have to be developed for RPM-9. Because the low-volume serial would benefit little from this alternative,

the serial would presumably have little need to make a significant contribution to such an agency.

Operational Cost

RPM-9 operational costs for the low-volume serial would be minimal.

6.3.4 High-Volume Serials

A minority of copyrighted domestic serials can be characterized as high-volume. That is, this minority of serials accounts for a comparatively large proportion of photocopy items potentially eligible for royalty payment. Their special considerations are addressed in this section.

6.3.4.1 RPM-1: Purchase of Excess Copies from Central Agency

Speed of Payment

As with low-volume serials, there would be some delay in payment imposed through interposition of a central agency between the libraries and high-volume serials. However, high-volume serials might make special arrangements to receive payments more frequently than low-volume serials, perhaps quarterly or monthly.

Accuracy

Royalty payments to high-volume serials through RPM-1 would have high accuracy.

Transition Cost

Transition costs for RPM-1 might be high if a central file of originals must be developed. Since high-volume serial publishers would be expected to be the chief beneficiaries of this mechanism, they might have to bear a large proportion of its cost.

Operational Cost

It may be desirable to minimize the potential labor-intensive costs for operation of such a central document sales agency. This could be accomplished through semi-automation (e.g., microfiche-to-paper) of its duplication operations, but such automation might only be cost-effective for high-volume serials due to infrequent request for low-volume serials. Comparatively speaking, the bulk of operational costs would fall upon high-volume serials.

6.3.4.2 RPM-2: Purchase of Excess Photocopy Items for Individual Publishers

Speed of Payment

RPM-2 would have a high payment speed since royalty payments would accompany an order for photocopy items or would be expected within a normal billing cycle.

Accuracy

RPM-2 would result in a very close correspondence between the volume of eligible photocopy items and actual royalty payments, assuming royalty payments were charged on a per-item basis.

Transition Cost

Transition costs for RPM-2 for the high-volume serial would be significant if the publisher did not already have a reprint sale mechanism in operation. Direct marketing of the service by individual publishers for individual serials would also be expensive.

Operational Cost

Operational costs for the high-volume serial for direct sale of photocopy items of individual articles would be moderate to high (in terms of clerical time) but this would at least partially be offset by service and royalty fees.

6.3.4.3 RPM-3: Optional Higher Subscription Price

Speed of Payment

For those high-volume serials for which libraries would choose to pay a higher subscription price in advance for a license to photocopy in excess of fair use and guidelines, speed of payment would be no problem. There also is a great financial advantage due to improved cash flow.

Accuracy

Accuracy for high-volume serials would be low to moderate, depending on the pricing mechanism used for the option. Possible over-charging and undercharging might arise due to use of flat-fee systems. RPM-3's accuracy would be higher than RPM-4's accuracy, the Blanket Higher Subscription Price.

Transition Cost

Transition cost for adding the subscription price option to existing payment channels would be low to moderate, depending partly upon the amount of additional contacts to be made with subscribers who choose the option, and partly on increased internal accounting costs for establishment of an additional price category. A possible extra cost would be a monitoring or enforcement mechanism to determine if a library should be paying an option price but is not.

Operational Cost

Operational costs for the high-volume serial for RPM-3 would be minimal, unless selective monitoring or enforcement operations were initiated.

6.3.4.4 RPM-4: Blanket Higher Subscription Price

This alternative mechanism is similar to RPM-3 except that subscribers would not have the option of choosing or not choosing to pay the higher subscription price, which would then give them a license to make photocopies in excess of fair use and guidelines.

Speed of Payment

As in RPM-3, payment would be "cash return" prior to libraries' actual making of excess photocopy items during any given subscription period.

Accuracy

Accuracy might be somewhat lower than the accuracy of RPM-3 since both high-volume and low-volume libraries would be covered. Accuracy would be improved by using a graduated scale for the blanket higher subscription price -- smaller or lower-volume libraries paying a smaller differential as a consequence of their lower expected volume of excess photocopy items.

Transition Cost

The transition cost for RPM-4 for nigh-volume libraries would be minimal. This might change, however, depending upon the different payment scales which might be introduced to increase the accuracy of the mechanism. Development of a monitoring or enforcement mechanism would also increase transition costs for high-volume serials.

Operational Cost

Operational costs for RPM-4 for high-volume serials would be minimal, unless operation of a monitoring or enforcement mechanism were necessary, or unless some serials classified as high-volume were actually peripheral to some libraries and therefore dropped.

6.3.4.5 RPM-5: Direct Licensing Between High-Volume Libraries and High-Volume Serials

Speed of Payment

Speed of payment would depend upon the nature of the licensing agreement. Flat-fee payment might be made in advance, in anticipation of copying. Libraries with the capability for regular tallying of copying might be licensed on the basis of a regular payment.

Accuracy

This also would depend on the nature of the licensing agreement.

Transition Cost

The chief transition cost would be the negotiation of a number of licensing agreements within a given length of time. A lack of standardization in the agreements, designed to take into account legitimate differences among high-volume libraries, would result in an increased transition cost. Therefore, an important determinant of the transition cost for RPM-5 for high-volume libraries will be the actual number of libraries which fall into the high-volume category.

Operational Cost

Operational costs for RPM-5 for the high-volume serial should not be high, once initial licensing agreements are made.

6.3.4.6 RPM-6: Central Agency for Counting, Billing, and Payment

An example of RPM-6 is the Copyright Clearance Center designed by the AAP to go into operation January 1, 1978 (12).

Speed of Payment

There would be some delay in payment to high-volume serials due to interposition of an agency between libraries and high-volume serial publishers.

Accuracy

The accuracy of RPM-6 for high-volume serials would depend upon the method used for counting or estimating photocopy items. As mentioned previously, the most accurate method would be a census of eligible photocopy items, followed by a sample approach, then by a graduated-scale licensing system operated by the central agency.

Transition Cost

The transition cost for RPM-6 for the high-volume serial would depend upon the need for input standardization (e.g., standardized coding on individual articles to facilitate data collection), but mainly upon the cost borne by the high-volume serial for development of such a mechanism. Since high-volume serials would benefit significantly from development of such a mechanism (in terms of gross payments), they might be expected to share in a greater proportion of the transition costs.

Operational Cost

The RPM-6 operational cost for high-volume serials would be significancly less than the direct licensing alternative. The cost of operation would be borne by the collected copyright royalties. One method of support would be for the central agency to collect fees from participating serials based on royalties collected or the number of eligible photocopy items counted. One determinant of the level of these "transaction fees" would be the proportion of non-eligible copy records screened and processed by the central agency.

6.3.4.7 RPM-7: Royalty Stamps or Royalty Coupons

Speed of Payment

Speed of payment to high-volume serials by RPM-7 would depend upon its accounting period. Payment to high-volume serials could be made more frequently than payment to low-volume serials.

Accuracy

Accuracy of RPM-7 would be high to moderate, depending upon the counting or estimation method used. A method would be needed for allocation of payments. If a sample survey method were used, it would be relatively more easy to obtain accurate (and statistically precise) data concerning high-volume serials than for low-volume serials, due to the highly skewed nature of the photocopy item per title distribution.

Transition Cost

The transition cost for RPM-7 for high-volume serials depends upon the same factors as other alternative mechanisms which are not involved in the actual sale of photocopy items or reprints.

Operational Cost

The operational cost for a royalty stamp mechanism to high-volume libraries would depend upon the number of eligible photocopy items estimated by the payment allocation mechanism and upon the processing fee required by the mechanism.

6.3.4.8 RPM-8: Payment of Royalties Through Existing Systems

Speed of Payment

Due to the interposition of an additional step between the responsible library and the high-volume serial, a payment delay would exist.

Accuracy

Payment accuracy to high-volume serials would potentially be high, due to the greater ease of identifying and counting high-volume serials, especially by existing document-delivery systems which already charge on a unit basis. Low-volume libraries and small for-profit document delivery services might find flat-rate licensing fees more feasible, so accuracy for these copying agents might be somewhat less than for high-volume libraries.

Transition Cost

Unless there is a central agency which could act on behalf of high-volume serials in setting up, say, licensing agreements with existing and developing document delivery systems, the cost for RPM-8 to high-volume serials would be high due to the necessity of dealing with so many potential sources for payment.

Operational Cost

Operational costs incurred by high-volume serials for use of developing and existing systems would be low since these systems would presumably absorb a significant proportion of the operational cost.

6.3.4.9 RPM-9: Payment of Photocopying Machine Fee to a Central Agency

Speed of Payment

Speed of payment for RPM-9 to high-volume serials would not be high, due to the need to interpose a central agency between library and publisher.

Accuracy

Accuracy would not be high unless potentially expensive monitoring capabilities were developed to insure that payments to individual serial publishers were actually proportional to photocopy items.

Transition Cost

Transition costs for the high-volume serial would be moderate since use of RPM-9 would probably require some compromise to be made on accuracy. The bulk of costs of designing and developing a central agency would be passed on to the high-volume serials.

Operational Cost

Operational costs for RPM-9 for the high-volume library would be minimal, chiefly due to a simplification of the data collection procedures which might be required of a central agency.

6.4 Comments and Conclusions

There are still uncertainties concerning the circumstances in which royalty payments would be legally required. Examples of these uncertainties are the following:

- The lack of a concrete definition of the universe of publications to be covered by a royalty payment mechanism
- The lack of an unambiguous, quantitative definition of "systematic" photocopying
- The lack of an unambiguous definition of the term "open to the public"
- The lack of guidelines concerning serials older than five years
- The lack of guidelines governing the photocopying of library materials in response to local user and intrasystem loan requests
- The lack of a definition of "library system"

Until these uncertainties are resolved it will continue to be difficult to assess the impacts of alternative royalty payment mechanisms.

Despite these uncertainties, it appears that no mechanism satisfies all feasibility criteria equally well. It appears that a mix of mechanisms would best accommodate the different volumes and types of photocopying. For example, interlibrary loan, with its special eligibility requirements and its potentially low volume, might be more efficiently handled separately from local user requests and/or intra-system loan requests.

The majority of libraries and serials account for a comparatively low volume of photocopying. A sampling approach to estimating eligible photocopying volume must be very carefully designed to generate accurate and precise statistics for these libraries and serial titles. For such statistics to be statistically valid and as acceptable to the parties involved as a census approach, the cost of a sampling approach, while lower than the cost of a census approach, should not be underestimated.

Also because the majority of libraries and serials account for a comparatively low volume of photocopying, it may be more cost-effective, at least initially, for a central agency, clearinghouse, or payment center to concentrate on serving high-volume serials and high-volume libraries. Over the long run such a facility might be advantageous to all libraries and publishers.

We have already stated that a mix of mechanisms is likely to be the most feasible approach. At the same time, the possibility of the development of competing or non-complementary mechanisms should not be ignored. It is conceivable that problems of access for library users might result if royalty payment procedures are not standardized or at least coordinated. If library compliance with royalty payment mechanisms is complex, more responsibility for access might be shifted to users by curtailment or modification of existing library services. This might initially result in decreased access for users. At the same time, it might help develop a market for other document delivery services which choose to comply with royalty payment requirements.

Monitoring or enforcing royalty payment is potentially one of the most expensive components of the development of a royalty payment mechanism. If monitoring and enforcement are desired by publishers, these functions would be most efficiently carried out by a central agency, assuming that legal questions such as antitrust are resolved.

Much depends upon the pricing mechanisms instituted by various publishers. Uniform royalty pricing would be easiest to adopt from the standpoint of libraries, and to a lesser extent by a centralized agency, but it may not be acceptable to publishers with different operational costs.

The potential impact of royalty payment mechanisms in terms of subscription cancellations is still uncertain. We hypothesize that, if cancellations occurred, they would have the most negative impact on small, specialized journals. It will be difficult, however, to isolate the effects of royalty payments and mechanism requirements due to the existence of intervening variables such as library network developments and library budget constraints.

The most potentially burdensome screening operation for libraries to perform is the maintenance and checking of a manual or machine-readable file for determining the number of past requests for photocopying of the same serial title. In an operating royalty payment mechanism this appears to be an operation which could most advantageously be centralized or which might be modified in order to simplify mechanism operations.

We conclude that many libraries are willing to trade some accuracy in royalty payments in return for a simplification of possible royalty accounting procedures, based upon their comparatively high ranking of the subscription price alternative in the national library survey. Unfortunately, we do not possess comparable data on preferences for publishers, subscription agents, government policy makers, and library users. Perhaps most important of all, data on authors' preferences for royalty payment mechanisms are also lacking.

BIBLIOGRAPHY

1. Association of Research Libraries. ARL Statistics, 1975-1976. Washington, D.C.: ARL, 1976.

2. Congressional Record-House. "Joint Explanatory Statement of the Committee of Conference," Sept. 29, 1976, pp. H11 728-H11 729.

3. Fry, Bernard M., Herbert S. White and Elizabeth L. Johnson. Survey of Publisher Practices and Present Attitudes on Journal Article Copying and Licensing. Bloomington, Indiana: Indiana University, Graduate Library School, June 30, 1977 (Draft).

4. King, Donald W., et al. Statistical Indicators of Scientific and Technical Communication (1960-1980); Volume I: A Summary Report (NSF C-878). Washington, D.C.: U.S. Government Printing Office, 1976.

5. Line, Maurice B. and D. N. Wood. "The Effect of a Large-Scale Photocopying Service on Journal Sales." Journal of Documentation 31:4:234-45 (December 1975).

6. Machlup, Fritz. "The Production and Distribution of Scientific and Technological Information." A study in process under NSF Contract SIS74-12756A01. New York: New York University.

7. Palmour, Vernon E., et al. A Study of the Characteristics, Costs and Magnitude of Interlibrary Loan in Academic Libraries. Westport, Connecticut: Greenwood Publishing Company, 1972.

8. Rudd, Benjamin. "Excise Tax Solution." Copyright and Photocopying; Papers on Problems and Solutions, Design for a Clearinghouse, and a Bibliography. Edited by Laurence B. Heilprin. College Park, Maryland: University of Maryland, College of Library and Information Services, 1977.

9. Sophar, Gerald J., and Laurence B. Heilprin. The Determination of Legal Facts and Economic Guideposts with Respect to the Dissemination of Scientific and Technical Information as It is Affected by Copyright - A Status Report. Final Report. Washington, D.C.: Committee to investigate Copyright Problems Affecting Communication in Science and Education, Inc., December 1967. (ERIC No. ED 014621)

10. Stuart-Stubbs, Basil. Purchasing and Copying Practices at Canadian University Libraries. Ottowa, Ontario, Canada: Canadian Library Association, 1971.

11. Ulrich's International Periodicals Directory. New York: R. R. Bowker and Company, 1975-1976.

12. Wagner, Susan. "AAP Spells Out Clearinghouse Plan for Photocopying at CONTU Meeting." Publishers Weekly 211:15:28 (April 11, 1977).

13. Whitestone, Patricia. Photocopying in Libraries, the Librarians Speak. White Plains, New York: Knowledge Industry Publications, 1977. (ISBN 0-914236-08-3).

14. The National Commission on Libraries and Information Science, Toward a National Program for Library and Information Services: Goals for Action. Washington, D. C.: The Commission, 1975.

APPENDIX A

DATA COLLECTION FORMS

1. Solicitation Letter
2. ILL Borrowing Form
3. ILL Borrowing Form Instuctions
4. Characteristics Form
5. Characteristics Form Instructions
6. Volume Log
7. Volume Log Instructions
8. Copyright Royalty Library Survey Questionnaire

SOLICITATION LETTER

Dear Library Director:

I'm writing to ask your participation in an important study to clarify some of the issues in the area of copyright. The National Commission on Libraries and Information Science and the Division of Science Information of the National Science Foundation, have contracted with King Research, Inc. (KRI) of Rockville, Maryland for a survey of the volume and characteristics of library photocopying.

This is a national survey which includes academic, federal, public and special libraries. Your library is one of 370 selected to participate. Our present schedule calls for two 7-day collection periods, one in (month) and the other in (month) . During each period, you will be asked to monitor the volume of photocopying using a simple log form furnished by King Research, Inc. For a short time during each data collection period, more detailed characteristics of photocopied, copyrighted serials will be recorded separately on a simple form especially designed for this purpose. You will also receive a short questionnaire on photocopying costs, charges to patrons for photocopying services and other data needed for analysis.

Please complete the enclosed screening form so that we may initiate your participation. Should you have any questions, telephone Pat Dowd, King Research, Inc. (301) 881-6766, collect.

NCLIS is aware that many libraries are overburdened with survey forms. I am sure you will agree, however, that this particular study is of the utmost importance to the library community. For the first time, we will have valid data describing library photocopying practices in the United States instead of conjecture and opinion. The validity of the study depends upon your cooperation. Please return the enclosed screening form to signify your willingness to participate in the research.

Sincerely,

Alphonse Trezza
Executive Director
NCLIS

AT/jh
Enclosures

American Library Association
Association of Research Libraries
Special Libraries Association

September 1976

Dear Colleague:

I am writing to urge your participation in the national study of library photocopying being sponsored by NCLIS, NSF and CONTU.

The quantity of library photocopying has been a controversial issue for many years. During the attempted negotiations in recent years between the library community and the publishing community (the Conference on the Resolution of Copyright Issues), published library statistics were not accepted by the publishers because they feared that such studies contained biases in favor of libraries. Therefore because no data on the volume and characteristics of this copying mutually acceptable to both sides could be considered, progress toward any kind of a solution was hindered. The proposed study will collect and analyze such photocopying data. The study is also to include a study of the feasibility of royalty payment mechanisms.

The validity of this study depends on the cooperation of the libraries that are selected to participate. Your library is one of 370 libraries selected by the contractor to represent all libraries in the United States. Your participation is essential.

This study is of utmost importance to the total library community and the importance of your participation cannot be overstated. The enclosed letter from Al Trezza, NCLIS Executive Director, presents additional information about the study.

Robert Wedgeworth
Executive Director
American Library Association

John G. Lorenz
Executive Director
Association of Research Libraries

F. E. McKenna
Executive Director
Special Libraries Association

enc.

NOTE: This report is authorized by Public Law 91-345. While you are not required to respond, your cooperation is needed to make the results of this survey comprehensive, accurate and timely.

King Research, Inc.
Rockville, Maryland
September 1974
OMB No. 166-S-76002

NCLIS PHOTOCOPYING CHARACTERISTICS STUDY
SCREENING FORM

Name/Title of Coordinator_____

Mailing Address_____

_____

Please read the instructions on the reverse side carefully before completing this form.

1. Does this library have branches or other related facilities separate from the central library?

   1 - Yes (Include any branches or related facilities in answering the following questions.) 2 - No

2. Is the organization of which you are a part considered to be non-profit?

   1 - Yes 2 - No

3. Does this library operate or have access to one or more photocopying machines?

   1 - Yes 2 - No (Thank you. Please return this form to KRI in the enclosed, stamped envelope.)

4. How many branch or department libraries operate, or have access to, photocopying machines? (Do not include the main or central library.)

   Number of Branches or Departments _____

5. Please record the following information for the central library and any branches or departments. Try to be as accurate as possible. If actual counts are not available, please give your best estimate.

	CENTRAL LIBRARY	ALL OTHER BRANCHES/DEPTS.
A. INTERLIBRARY LOANS		
Number of Items Borrowed or Received per Year		
Number of Items Loaned or Sent per Year		
B. INTRA-SYSTEM LOANS		
Number Processed per Year		
C. COPYING MACHINES OPERATED BY OR FOR LIBRARY STAFF		
Number of Xerox-type Photocopying Machines		
Number of Microform Cameras or Duplicators		
Number of Microform Reader/Printers		
Number of Facsimile Transmission Sender/Printers		
D. COPYING MACHINES NOT LISTED IN ITEM C WHICH ARE LOCATED IN THE LIBRARY AND MAY BE USED BY PERSONS OTHER THAN LIBRARY STAFF TO COPY LIBRARY MATERIALS		
Number of Xerox-type Photocopying Machines		
Number of Microform Cameras or Duplicators		
Number of Microform Reader/Printers		
Number of Facsimile Transmission Sender/Printers		
E. AVERAGE NUMBER OF EXPOSURES PER WEEK		
Number of Exposures on All Photocopying Equipment Listed in Item C (staff-operated copiers)		
Number of Exposures on All Photocopying Equipment Listed in Item D (other copying machines)		

THANK YOU FOR YOUR HELP

242

Date_____

NCLIS PHOTOCOPYING CHARACTERISTICS STUDY

ILL BORROWING FORM

Complete this form for serial ILL requests only

King Research, Inc.
Rockville, Maryland
OMB No. IE6-S-76003
Expires March 1977

THIS SECTION SHOULD BE COMPLETED BY THE REQUESTOR

Requestor:
- Faculty 1
- Student 2
- Other individual 3
- Library 4
- Other institution 5

Purpose of Request:
- Replacement 1
- Class use 2
- Personal use 3
- Other 4

Year of Publication ____

Publisher:
- Domestic 1
- Foreign 2

Number of Pages in Article ____
Number of Copies Requested ____

THIS SECTION SHOULD BE COMPLETED BY THE BORROWING LIBRARY

Disposition:
- Filled/original 1
- Filled/photocopy 2
- Unfilled 3
- Still in process 4

Lending Library:
(if request is filled)
- Academic library 1
- Federal library 2
- Public library 3
- School library 4
- For-profit special library 5
- Other special library 6
- Type of library unknown 7

NAME OF SERIAL _____

ISSN ____

INSTRUCTIONS FOR COMPLETING ILL BORROWING FORM

Please complete this form whenever serial material is to be borrowed from another library through the Interlibrary Loan System. One ILL Borrowing Form should be completed for each serial ILL request _____.

1. When a patron makes a request for serial material, please ask him to complete the left side of the form by circling the appropriate numerical codes to indicate:

   -- his status, i.e., is he a teacher or student; does he represent a library or some other institution.

   -- the purpose for which he is requesting the material.

   -- the year of publication of the serial.

   -- whether the publisher is foreign or domestic. If both, indicate domestic.

   -- the number of pages in the requested material.

   -- the number of copies of the material requested, e.g., if 5 copies are requested of a 10-page article (a total of 50 pages) the number of copies should be recorded here as 5.

2. After the left side of the form has been completed by the patron, attach the form to your file copy of the standard ILL request form.

3. When the ILL request form is returned by the lending library, either with the material requested or with an indication as to why the material was not sent, pull the appropriate file copy with its attached ILL Borrowing Form. Detach the ILL Borrowing Form and complete the second column by circling:

   - the disposition of the request
   - the appropriate code for lending library type

   Academic - *College and university libraries*

   Federal - *Libraries of federal agencies (do not include libraries in universities or private research firms that are funded by federal contract)*

   School - *Libraries affiliated with schools other than colleges and universities*

   Special - *All other libraries (Circle "5" only if you know that the library is associated with a profit-making organization. Circle "6" for all other special libraries.)*

   The form is now ready for return to King Research, Inc.

4. On _____, pull from your file any remaining ILL Borrowing Forms and circle the Disposition code for "still in process". Add these forms to those already completed and return to KRI.

[ ][ ][ ][ ] Date_____

King Research, Inc.
Rockville, Maryland
OMB No. 186-S-76003
Expires March 1977

NCLIS PHOTOCOPYING CHARACTERISTICS STUDY
CHARACTERISTICS FORM

PART I. FILL OUT FOR ALL COPYING OF LIBRARY MATERIALS

Type of Item
1 - Book 2 - Serial 3 - Other

Interlibrary Loan?
1 - Yes 2 - No

Copyrighted?
1 - Yes 2 - No 3 - Unknown

Intra-system Loan?
1 - Yes 2 - No

Year of Copyright [ ]

Number of Pages [ ]

Number of Copies [ ]

PART II. FILL OUT THIS SECTION FOR COPYING OF COPYRIGHTED SERIALS ONLY

Serial Title_____

Name of Copyright Holder_____

Is Copyright Holder: Domestic - 1 Foreign - 2

ISSN [ ]

Volume [ ] Issue [ ] Mo./Day/Year [ ][ ][ ] First Page [ ]

FILL OUT FOR INTERLIBRARY LOANS

Source of Request:

Academic library	1
Federal library	2
Public library	3
School library	4
For-profit special library	5
Other special library	6
Type of library unknown	7

FILL OUT FOR ALL OTHER COPYING

Source of Request:

Individual/institution	1
Internal/library staff	2
Unknown	3

Purpose of Request:

Replacement by library	1
Classroom use by faculty	2
Other	3
Unknown	4

OFFICE USE ONLY: Library Code [ ] Publisher Code [ ]

King Research, Inc.
Rockville, Md.
September 1976
OMB No. 186-S-76003
Expires March 1977

NCLIS PHOTOCOPYING CHARACTERISTICS STUDY

VOLUME LOG

Type of Photocopier _____

Manufacturer _____ Model Number _____

Date _____

Type of Library Material			Copyright			Library Loans		Number of Pages	Number of Copies
Book	Serial	Other	Year of Copr.	No Copr.	Don't Know	Inter-library	Intra-system		

After the last transaction of the day is completed, please record the total number of exposures made on this photocopying machine. Include all copies made during the day.

TOTAL NUMBER OF EXPOSURES [ ]

INSTRUCTIONS FOR COMPLETING THE VOLUME LOG

For the period _____, keep a copy of the Volume Log next to each photocopying machine used by or for library staff. Please record on the log each photocopying transaction involving library materials which takes place on that machine during the time specified.

Fill out one line of the form for each transaction, i.e., each photocopy request for a page or series of pages from one publication. If more than one series of pages from different articles is requested, record each series as a separate transaction. Record separate articles within the same publication as separate transactions. Remember to include only copying of library controlled materials done by or for library staff.

As was mentioned in the letter which accompanied these materials, you will be filling out the Characteristics Form for a short part of the data collection period. During the time you are scheduled to record transaction information on the Characteristics Form, do not use the Volume Log.

Identification Information -- Record the type of photocopier, e.g., Xerox-type machine, microfilm camera, etc.; the manufacturer; and the model number. Then, enter the date for which you are recording photocopying transactions. Please begin a new log sheet each morning even if there is space on the Volume Log of the preceding day.

Type of Material -- Under the heading "Type of Material", make a check mark (✓) in the appropriate column to show the type of library material being copied. Make a check mark in the first column to indicate a book or monograph; check the second column to show that the material requested is part of a serial publication; and check the third column to indicate any other type of library controlled material. The following definitions apply.

Book - *Include monographs and any other items that are treated as books. This category also includes serial publications which appear annually or less frequently, e.g., annual reviews and other similar publications.*

Serial - *A publication issued in successive parts bearing numerical or chronological designations, which is intended to be continued indefinitely and which may be identified by an ISSN (International Standard Serial Number). Serials include periodicals, newspapers, and the journals, memoirs, proceedings, transactions, etc. of societies. Serials are subject to subscription prices paid in advance. (This eliminates publications that appear annually or less frequently.)*

Other - *Any other type of library controlled material, e.g., technical reports, photographs, etc.*

Exceptions: *Sheet music is a special exception. Information for any transactions involving sheet music should not be recorded on the Volume Log. Also excluded from this category are memos, forms, cataloging cards, etc. These are not considered library materials and should not be recorded on the Volume Log.*

Copyright -- In books or monographs, the copyright usually appears on the reverse of the title page. In serials, check: (1) the owner of publisher's statement on the reverse of the title page; (2) the list of publishers or authors; or, (3) the first page of the article being copied. The copyright may be indicated in various ways (e.g., © , copyr. or copyright) but it should always include the year and the name of the publisher or publishing society, or other copyright holder, e.g., © 1975 Name of Publisher; or Copr. 1948 Name of Publishing Society.

Under the heading, "Copyright", write the year of the copyright in the first column for any type of copyrighted material. If no copyright information is given, make a check mark (✓) in the second column to show that the material probably is not copyrighted. Make a check mark (✓) in the third column if it is impossible to tell whether or not the material is copyrighted because the cover, contents page, etc. is missing as when they have been removed in the binding process.

(Over)

Library Loans -- Under the heading "Library Loans", make a check mark (✓) in the first column under "ILL" (Interlibrary Loan) if the material has been requested as an Interlibrary Loan by a library outside your library system. Make a check mark (✓) in the second column under "ISL" (Intra-system Loan) if the material was requested by branch or department library within your library system.

Number of Pages -- Record the number of pages of original being copied.

Number of Copies -- Record the number of copies provided. For example, if five copies of a 10-page article are provided (a total of 50 pages), enter "5" as the number of copies made.

Total Number of Exposures -- At the end of each day, please record the total number of exposures that were made on that machine on that day. Include all copies even if they did not involve the reproduction of library material. This information should be recorded on the last sheet of the Volume Log filled out for that particular machine on that date.

King Research, Inc.
6110 Executive Blvd.
Rockville, Md. 20852
(301) 881-6766

COPYRIGHT ROYALTY LIBRARY SURVEY

OMb
186-
Expires:

ID# [ ][ ][ ][ ]

The purpose of this survey is to help in estimating what the impact might be on libraries of various arrangements for making royalty payments for the photocopying of copyrighted serial articles. Most of the questions concern background information related to interlibrary loan (ILL) or photocopying operations, or possible cost implications for these operations of participating in a royalty payment mechanism of some sort.

Some of the questions (4,5,6,7,8,9,10, & 11) would benefit from being answered by an individual responsible for setting or stating library policy. Remaining questions deal with important cost and volume data which will be used to help assess impacts of possible royalty payment mechanisms. Please insert below the names, titles, and telephone numbers of individuals whom we might contact if any questions arise about interpretation of responses:

	Name	Title	Telephone
•	_____	_____	( ) _____
•	_____	_____	( ) _____
•	_____	_____	( ) _____

• Name of Library: _____

In answering questions, please try to adhere to the following definitions:

LIBRARY - this term includes both the central library/headquarters and the branch libraries/departments of your library, library system, or archives.

PAPER-TO-PAPER PHOTOCOPYING MACHINES - machines used to make duplicate copies of paper originals, such as Xerox, Olivetti, and IBM copiers.

PATRONS - refers to individuals who use or contact your library in person or by telephone. Patrons may or may not be employed by or associated with your library's parent institution.

EXPOSURES - refers to the number of sheets of paper produced by paper-to-paper photocopying machines when materials are being duplicated.

UNSUPERVISED - refers to photocopying machines within your library which may be used by patrons without copying assistance of library staff. Usually includes coin-operated machines.

SERIAL - A publication issued in successive parts bearing numerical or chronological designations, which is intended to be continued indefinitely and which may be identified by an ISSN (International Standard Serial Number). Serials include periodicals, newspapers, and the journals, memoirs, proceedings, transactions, etc. of societies. Serials are subject to subscription prices paid in advance. (This eliminates publications that appear annually or less frequently.)

BOOK - Include monographs and any other items that are treated as books. This category also includes serial publications which appear annually or less frequently, e.g., annual reviews and other similar publications.

CALENDAR YEAR - January through December

ROYALTY - a payment made to a copyright owner to help compensate for library photocopying of copyrighted serial articles.

MULTIPLE COPIES - more than 5 copies from the same serial title either made for local patrons by or for your library staff or received by your library in response to an ILL request.

ILL REQUEST FILE - any file or other collection of data, arranged in any filing order, for keeping track of incoming or outgoing ILL requests.

ONE-TIME COSTS - labor or non-labor costs incurred only once at the initiation of a project or activity.

RECURRING COSTS - labor or non-labor costs incurred on a regular basis, following initiation of a project or activity.

AVERAGE MONTHLY BASIS - average monthly cost based on (a) annual cost divided by 12 or (b) costs for an "average" month as determined by library management.

1. What is the TOTAL number of paper-to-paper photocopying machines operated by or in your library? (Insert zero (0) if none)

   (a) in central library or headquarters . . . . . _____ (17-19)

   (b) all other branches/departments of library . . . . . _____ (20-22)

   (c) TOTAL (a + b) . . . . . _____ (23-25)

   (d) What is the total annual volume of exposures made on all of these machines? . . . . . _____ (26-32)

2. How many of the machines reported in (1) above are regularly (at least once per week) used by or for library staff *or patrons* for copying library materials? (Exclude machines used exclusively for office-type copying such as correspondence, catalog cards, etc. Insert zero (0) if none)

   (a) in central library or headquarters . . . . . _____ (33-35)

   (b) all other branches/departments of library . . . . . _____ (36-38)

   (c) TOTAL (a + b) . . . . . _____ (39-41)

   (d) What is the total annual volume of exposures made on these machines? . . . . . _____ (42-48)

3. How many of the machines reported in (2) above are used exclusively by library patrons for the unsupervised copying of library materials? (By "unsupervised" is meant that patrons may operate the machines without the direct permission or assistance of library staff, as in the case of patron-operated coin machines).

   (a) in central library or headquarters . . . . . _____ (49-51)

   (b) all other branches/departments of library . . . . . _____ (52-54)

   (c) TOTAL (a + b) . . . . . _____ (55-57)

   (d) What is the total annual volume of exposures made on these machines used exclusively by library patrons? . . . _____ (58-64)

4. In addition to your library's photocopying machines, are there any paper-to-paper photocopying machines operated within *other* local offices or departments of your parent institution or company? (Circle 1, 2, or 3. Use 3 if you are an independent library without a parent institution or company)

   Yes . . . . . 1 (Go to Q. 5)

   No . . . . . 2 (Skip to Q. 6) (65-66)

   Not Applicable . . . . . 3 (Skip to Q. 6)

5. To the best of your knowledge, is the volume of exposures made of *copyrighted books and serials* on these other machines greater than, less than or about the same as the volume of exposures of copyrighted books and serials made on all library staff- and user-operated machines? (Circle appropriate response)

   Greater than 1

   Less than 2 (67-68)

   About the same 3

   Don't know 4

6. According to guidelines issued by the Commission on New Technological Uses of Copyright (CONTU), responsibility for interlibrary loan (ILL) photocopying of copyrighted serial articles will belong to the requesting library when the new Copyright Law goes into effect January 1, 1978. This responsibility might include payment of royalty fees to copyright owners for serial article photocopies which are not exempt from payment.

Were your library to determine the following royalty exemption category for each serial article photocopy requested or received via ILL on a regular basis, would your library incur any extra costs which your budget would be unable to absorb without obtaining additional staff or funding? (Please circle 1 (Yes) or 2 (No) for each item.)

Category	Extra Costs? Yes	No	
(a) To determine if your library has a current subscription (or one on order) for a title which is still being published at the time you make the ILL request	1	2	(69-70)
(b) To determine if your library has already requested a photocopy from this same serial title via ILL at any time during the current calendar year	1	2	(71-72)
(c) To determine if the requested article will be used for scholarly research by a teacher in a not-for-profit educational institution	1	2	(73-74)
(d) To determine if the requested article will be used for classroom purposes by a teacher in a not-for-profit educational institution	1	2	(75-76)
		[ ]	(77-79)
		[1]	(80)
		[Dup.]	(1-6)

7. For the photocopying of copyrighted serial articles made by or for your library staff for your local patrons, would regular determination of the following categories result in your library incurring any extra costs which your budget would be unable to absorb without obtaining additional staff or funding? (Please exclude from consideration photocopies of copyrighted serial articles which your library makes for or receives via interlibrary loan (ILL). (Please circle 1 (Yes) or 2 (No) for each item.)

Category	Extra Costs? Yes	No	
(a) To determine if your library has a current subscription (or one on order) for a title which is still being published at the time you process the request	1	2	(7-8)
(b) To determine if your library has already made a photocopy from this same serial title for a local patron at any time during the current calendar year	1	2	(9-10)
(c) To determine if the requested article will be used for scholarly research by a teacher in a not-for-profit educational institution	1	2	(11-12)
(d) To determine if the requested article will be used for classroom purposes by a teacher in a not-for-profit educational institution	1	2	(13-14)

8. What are your library's relative preferences for the following mechanisms for making royalty payments for photocopying of copyrighted serial articles? Assume that each alternative would result in the same amount being paid by your library for royalties, and rank the alternatives from 1 to 8, with 1 = MOST PREFERRED and 8 = LEAST PREFERRED. (PLEASE READ ALL ALTERNATIVES BEFORE RANKING THEM.)

ALTERNATIVE ROYALTY PAYMENT MECHANISMS	RANK	
(a) Libraries would agree to purchase multiple copies or reprints of serial articles directly from the serial publisher or their agents	☐	(15-16)
(b) Libraries would pay an optional extra subscription price for those serials from which multiple copies would be made	☐	(17-18)
(c) Libraries would pay a fee for each photocopying machine to a central agency, which would then distribute these payments as royalties to copyright owners	☐	(19-20)
(d) Payment for copyright royalties would be made by libraries to individual publishers, requiring a tally to be kept by libraries for multiple copies of affected serial titles	☐	(21-22)
(e) Payment for copyright royalties would be made by libraries to a centralized agency which would have the responsibility for making a count of individual libraries' photocopies and for transmitting payments to publishers	☐	(23-24)
(f) Libraries would agree to purchase multiple copies or reprints of serial articles from a centralized agency authorized or designated by publishers which would then distribute copyright royalties.	☐	(25-26)
(g) Libraries would purchase "royalty stamps" or coupons from a centralized agency which would then be affixed to multiple copies of a copyrighted serial article	☐	(27-28)
(h) All subscription prices would be higher, automatically giving libraries permission to make multiple copies	☐	(29-30)

9. Assume that your library would be required to check each outgoing serial interlibrary loan (ILL) request to see if you had already requested, during the current calendar year, any articles from the last five years' issues of that same title. Do you think that this would require you to substantially restructure or rearrange your ILL request file (or begin a file of some sort) to facilitate this checking procedure? (Circle 1 or 2)

Yes . . . . . 1 (Go to Q. 10)
No . . . . . 2 (Skip to Q. 11) (31-32)
Not Applicable . . . . 3 (Skip to Q. 11)

10. What would be the one-time cost to your library of restructuring or starting this file? (Please round estimate to nearest dollar; insert zero (0) if none)

(a) One-time direct labor cost . . . . . $_____ (33-38)

(b) One-time materials cost . . . . . $_____ (39-44)

(c) Could your library absorb this cost without obtaining additional staff or funding?

Yes 1
No 2 (45-46)
Don't Know 3

11. How much, on an average monthly basis, do you estimate it would cost your library to perform this checking procedure for outgoing interlibrary serial article requests? (Please round to nearest dollar; insert zero (0) if none)

(a) Recurring direct labor costs . . . . . $_____ (47-52)

(b) Recurring materials costs . . . . . $_____ (53-58)

(c) Could your library absorb this cost without obtaining additional staff or funding?

Yes 1
No 2 (59-60)
Don't Know 3

[ ] (61-79)

[2] (80)

[Dup.] (1-6)

12. On an average monthly basis, how much do interlibrary loan operations cost your library? ("Interlibrary loan operations" includes: making and receiving requests; locating and verifying requests; and associated record-keeping and billing operations. Exclude your photocopying labor and non-labor costs. Please round to nearest dollar; insert zero (0) if none)

(a) Labor (professional and other) . . . . . $_____ (7-13)

(b) Materials (wrapping, mailing bags, forms, etc.) . . . . _____ (14-17)

(c) Postage . . . . . _____ (18-21)

(d) Other communication costs (e.g., telephone, teletype) . _____ (22-25)

(e) Photocopying and ILL fees paid to other libraries . . . _____ (26-29)

(f) Other (Describe): _____ . . . . _____ (30-33)

(g) TOTAL . . . . . $_____ (34-39)

13. If your library receives a subsidy or grant for participation in an inter-library loan network, please insert the portion of the subsidy or grant applied to cover ILL costs on an annual basis. (Please round to nearest dollar; insert zero (0) if none) . . . . . $_____ annually (40-45)

14. On an average monthly basis, what is your library's cost for operating and maintaining all the paper-to-paper photocopying machines for which it is responsible? (Include only the costs which the library pays. Please round to nearest dollar; insert zero (0) for none)

(a) Monthly rental or lease cost . . . . . $_____ (46-51)

(b) Supplies (paper, toner, chemicals, parts, etc.) . . _____ (52-55)

(c) Monthly maintenance contract or fees . . . . . _____ (56-59)

(d) Monthly staff costs for operation or maintenance of photocopying machines/photocopying dept. . . . . _____ (60-63)

(e) Other monthly costs for which library pays . . . . . _____ (64-67)

(f) TOTAL . . . . . $_____ (68-71)

15. Please insert the total purchase costs if you purchased any paper-to-paper photocopying machines during the last twelve months. (Please round to nearest dollar; insert zero (0) if none) . . . . . $_____ (72-77)

16. On an average monthly basis, how much gross income or fees does your library obtain from your photocopying and interlibrary loan operations? (Please round to nearest dollar; insert zero (0) if none)

[ ] (78-79)
[3] (80)
[Dup.] (1-6)

(a) Photocopying income/fees . . . . . $_____ (7-10)

(b) ILL income/fees . . . . . $_____ (11-14)

(c) TOTAL . . . . . $_____ (15-18)

17. Please describe your interlibrary loan request volume for calendar year 1976. (Please use zero (0) if none)

		Serials	Books	Other	Total	
(a) Requests <u>made</u> by your library	Total	(1)____	(2)____	(3)____	(4)____	(19-42)
	Filled	(5)____	(6)____	(7)____	(8)____	(43-66)

[ ] (67-79)
[4] (80)
[Dup.] (1-6)

(b) Requests <u>received</u> by your library	Total	(1)____	(2)____	(3)____	(4)____	(7-30)
	Filled	(5)____	(6)____	(7)____	(8)____	(31-54)

18. To assist in our analysis, we also need the following information:

(a) Total number of serial *titles* which you currently receive (excluding government publications) . . _____ (55-60)

(b) Total number of serial *subscriptions* which you currently receive (excluding government publications) . . . . . _____ (61-67)

(c) Current year's actual or projected acquisition budget for serials (exclude binding and round to nearest dollar) . . . . . $_____ (68-74)

(d) Total number of full-time equivalent (FTE) staff members (include both professional and other; please round to nearest unit) . . . . . _____ (75-78)

[ ] (79)

[5] (80)

19. Please use the space below to make additional comments:

Thank you.
Please Return this
Questionnaire to:

King Research, Inc.
6110 Executive Blvd.
Rockville, Md. 20852

APPENDIX B

SURVEY OF LIBRARY PHOTOCOPYING: METHOD

Population

In order to collect information on library photocopying, a sample of libraries was selected, representing the major types of libraries. The populations of Public and Academic Libraries as defined by the National Center for Education Statistics were used for those types. The population of Federal Libraries was based on the 1972 Federal Library Survey, a 1976 directory of Army Libraries, and update information provided by the 1975 edition of Library and Reference Facilities in the Area of the District of Columbia (ASIS) and by the members of the Advisory Committee to the project. For Special Libraries, the American Library Directory and Gale's Directory of Special Libraries and Information Centers were primary frames for sampling. The membership directory of the Special Libraries Association was used as a supplemental source list.

Sampling and Data Collection

The sample of libraries for collections of data on the volume and characteristics of photocopies of library materials made on library staff-controlled equipment was a stratified random selection representing the five categories of libraries: Academic, Public, Federal, Special associated with profit-seeking organizations, and special libraries associated with not-for-profit organizations. The target minimum number of participating libraries by type were: 100 Academic, 100 Public, 62 Federal, 74 Profit associated, 34 Non-profit associated. These target numbers were based in part on the estimated volumes of interlibrary lending for 1972, the most recent year for which comprehensive data could be assembled at the time. This was based on the expectation that most photocopying in libraries is for ILL purposes.

Large libraries and some with unique characteristics were included in the sample with certainty, to represent themselves. The remaining libraries of each type were stratified by significant variables to facilitate selection of a representative sample from which to estimate totals for the non-certainty libraries. Academic libraries were stratified by size (measured by volumes in

collection) and type of institution (University, four year, two year). Public libraries were stratified by population served and by region. Federal libraries were stratified by agency and by volume of interlibrary loans. Special libraries were stratified by size. Participation was invited from a sample larger than the minimum target number, so that ineligible libraries, refusals, and nonresponse would not disrupt the very tight time table.

In order to avoid excessive burden on any library, short sample periods were specified for collecting each major category of information. Each library was asked to record and report information on photocopying volumes for a sample period, to describe characteristics of library materials photocopied for selected days, and to report on requests made during a specified period for interlibrary loans - and on the disposition of those requests. These sample periods ranged from one day to three weeks, and were specified in light of volume reported on a preliminary screener form.

Subsequently, participating libraries were also asked to respond to a questionnaire which addressed questions of costs of photocopying operations, preferences among possible royalty payment mechanisms, judgments concerning relative costs of hypothetical recordkeeping procedures, and a few volume items. Thus, the data collection from libraries involved an initial screener inquiry and four separate, but closely related, requests for information.

In addition, the time limitation on the project did not permit data collection to be spread throughout the year. Therefore, it was important to find adjustment factors to correct for the difference between periods (days of the week and months of the year) when data were collected and the average activity over the year. Such adjustment weights were derived in the course of an analysis of interlibrary loan data for the MINITEX system for the year 1976.

Data was collected on all photocopying of library materials on library staff-controlled equipment, including both copies made for interlibrary loan purposes and copies made for local patron or in-house use. A preliminary screener form collected information on annual volumes and types of equipment. A "Transaction Log" was used to record volume data for the sample period on

all pertinent transactions, and a characteristics form was completed with additional information about a subset of the serial photocopies made. Purpose of request information for interlibrary loans was collected for a relatively small sample of ILL borrowing requests made by the sample libraries.

Among the data elements identified are the number of photocopying transactions; number of photocopies made; type of material copied; copyright status of the material; and, for journals, the title, copyright holder, date of publication, source of request, purpose of request, and (for requests to borrow) publisher (domestic or foreign), disposition of request and lending library if filled.

Response

The first solicitation to libraries designated for inclusion in the sample and for alternates was a "screener" form. Follow-up letters were mailed to all addressees that did not respond. The response was good for Public and Academic libraries (See Table B.1, Response Statistics). Roughly one-fourth of Federal libraries did not respond, and another one-fourth were found to be now ineligible or to do "no copying". Federal library activity is highly skewed, dominated by the national libraries. Hence KRI opted to emphasize special data collection arrangements with the largest libraries in order to ensure coverage of those certainty libraries. Among Special libraries the response to the original mailing was disappointing, leading to a decision to select and mail to a supplemental sample of 56 Special libraries. In the two mailings, 209 Special libraries were addressed, of which 49 refused or did not respond, 18 reported they did no copying, 39 responded and were found ineligible; and 100 quantitative responses to the screener were received.

Days for data collection for volume, for characteristics, and for purpose of requests were assigned to each library which provided a screener, based on the information reported therein. Volume logs, forms to record characteristics of library materials photocopied, and interlibrary loan forms for serials borrowed were then transmitted to each library which had answered the screener. At this stage, additional refusals and nonresponses occurred. Almost exactly 300 libraries reported on volume of photocopying and on the characteristics of materials copied, plus 44 reports of "no copying," as compared with the combined

Table B 1 RESPONSE STATISTICS (NUMBERS OF LIBRARIES)

Survey Category	Type of Library				
	Public	Academic	Federal	Special	Combined
1. Target Sample Size	100	100	62	108[a/]	370
2. Original Mailing	145	164	77	153	539
3. Supplemental Mailing	0	0	0	56	56
4. Reported Ineligible (closed etc.)	1	0	9	39	46
5. Reports of "No Copying"	8	3	12	21	44
6. Substantive Responses to "Screener"	117	142	39	100	398
7. Panel Reporting Volume	96	115	29	61	301
8. Panel Reporting Characteristics	95	115	30	59	299
9. Panel Responding on ILL borrowings	78	118	25	50	271
a. Zero borrowings	35	16	5	17	73
b. Non-zero borrowings	43	102	20	33	198
10. Gross Non-Returns to Screener	19	19	17	49	104
11. Imputed Ineligible and "No Copying" among nonrespondents $\left[\text{Line 10} \times \frac{\text{(Line 4 \& Line 5)}}{\text{(Line 4 \& Line 5 \& Line 6)}}\right]$	1	0	6	18	25
12. Gross Non-Returns to Volume Q	21	27	10	39	97
13. Estimated Net Non-Response to Volume Q (Line 12 - Line 11)	20	27	4	21	72
14. Estimated Rate of Net Non-Response to Volume Q $100\left[\frac{\text{Line 13}}{\text{Line 7 \& Line 13}}\right]$	17	19	12	26	19
15. Estimated Rate of Net Non-Response on Borrowings (%) $100\left[\frac{\text{Line 9}}{\text{Line 7 \& Line 13}}\right]$	33	17	24	39	27

[a/] This sample size is the sum of the allocations originally made with a view to the possible need for separate estimates for special libraries associated with profit-seeking organizations and non-profit special libraries. The smaller response actually attained supports estimates for special libraries as a whole, subject to qualifications described in the text.

target of 370. Academic libraries reported very conscientiously on borrowings, but in each of the other library types, a significant number of libraries did not report on borrowings.

Estimation

Estimates have been prepared by straightforward weighting up of sample observations corresponding to the probability of selection, the extent of nonresponse, and adjustments for the days of week and month of the year. The latter two adjustment factors were specific to the individual library. Nonresponse was computed by stratum within type of library, after taking out certain special cases for which tailored sampling and collection procedures were necessary for four very large libraries.

The estimates thus constructed are valid, with sampling variability, under certain "as if" conditions. Each estimate is valid if the reporting libraries' activities during the reporting intervals are in fact representative of all libraries in the population over the year. The sources of differences are in principle: (a) library population vs. library sample design; (b) library sample specified vs. panel of libraries which responded; (c) intervals in which data was collected vs. full year of activity; (d) data as interpreted from reports received and processed vs. activity which in fact occurred. Each possible "source of difference" calls for a corresponding qualification on the estimates.

The library sample was selected in such a way as to represent, on a stratified basis, the libraries in the sampling frame. As described earlier, the frames were updated to some extent, in particular those for Federal libraries and Special libraries. No LIBGIS-type collection has heretofore been done for Special libraries. The population is amorphous and ill-defined: both ALD and Gale's have inclusions of non-libraries and omissions of special libraries. To the extent there are Special libraries omitted from all of the sources used, the estimates for Special libraries necessarily understate the activity. "Deaths", i.e., libraries no longer active, constitute a special problem. They have been estimated from the returns to the screener form mailed to the designated sample.

Returns identified as inactive or merged into other libraries were used as a basis for estimating adjustments to the estimated population size by type of library. These were insignificant adjustments for Public and Academic libraries, and were substantial for Federal and Special. In summary, KRI's judgment is that the net effect on the estimates from source of difference (a) is probably small.

The second potential source of difference is that the average magnitude and characteristics of reporting libraries might be different from those not reporting. This has two aspects: the proportion of libraries having no photocopying, and amount and characteristics of photocopying by libraries which do so. Libraries which did not reply to the screener may in some cases have been libraries without photocopying who felt the survey simply didn't apply to them: "that they had nothing to tell us." If these are in the same proportion to all non-returns as the number reporting "no copying" to the total number of respondents, the estimates made are not thereby distorted. To the extent that a larger proportion of non-returns are in fact "no copying" libraries than we have estimated on the basis of the returns received, the aggregates estimated in the study are over-stated. Specifically, the effect of a probably extreme difference: that the rate of "no copying" libraries among nonrespondents to the screener was double the rate reported among respondents, on the estimated number of libraries with copying, (all four types combined) would be to reduce the number of libraries with photocopying by approximately 2%, and each of the other estimated aggregates by the same proportion.

The other aspect of potential bias from non-response is the possible differences in volumes and characteristics of photocopying of nonrespondents from those of respondents. Some libraries may have refused, feeling the size of their photocopying operations would entail a burden or some perceived legal risk which they chose to try to avoid. Libraries which returned screener data and then refused or failed to respond to the volume and/or characteristics surveys may have been motivated primarily by concerns about the work involved in completing the project. To assess the possible effects of this potential bias, if the 20% (net) of nonrespondents were to have on the average as much as 25%

greater volume in any one category as the average responding library, then the estimates for that category presented herein would be understated by 5%; if they had 50% more, the corresponding understatement in their estimate would be 9%; if 100% more, the understatement would be 17%.

For the interlibrary borrowing project, one further consideration enters. The ILL form calls for information on disposition, so the library was required to retain the form for days or weeks, in order to complete it on an individual transaction. Distraction of attention over a period of time is inevitable, which may well explain the smaller number of reporting libraries for that survey. Incomplete reporting could easily occur on the part of other libraries, too, if "stragglers", held for request replies, finally are misplaced or not remembered. Speculatively, the libraries which reported on volume and characteristics, but not on borrowings, may tend to be smaller in average borrowings (therefore not having formal recordkeeping for them) than the libraries which reported on borrowings. If so, the estimates herein would be overstated. However, more than 80% of this panel reporting on volume reported on borrowings. If the nonrespondents had only one-half the number of borrowings on the average as those reporting on borrowing, the overstatement from this source would be 11%. Any incompleteness of reporting would tend to affect the estimate in the opposite direction.

The third source of difference is between the "seasonal" and "day of week" adjustments applied and the actual experience of the libraries nationally. The factors applied were derived from MINITEX libraries requests for interlibrary loans for a year, so the question becomes: How different may MINITEX libraries' ILL requests be from those of the rest of the libraries in the country, and how different may volume of photocopying patterns be from ILL request patterns? No other evidence is known to us on which to base a judgment. However, the straightforward inflation by the number of days in the year related to the number of days reported would be a defensible estimator. The correction factors provide a refinement, and alternative values of the factors would likely not have a consistent effect in the same direction, since collection occurred from October through April. KRI judgment is that this source of possible difference probably may have small effect for Public and Academic libraries, and possibly moderate effect for Federal and Special libraries (which are not numerous in MINITEX).

The fourth potential source of difference includes all the possible kinds of errors in interpretation of the information requests by libraries and all the mistakes in understanding and processing reported data. The conduct of the surveys included safeguards intended to minimize these problems. However, there is no evidence on which to judge what the residual error might be. An independent reliability and validity study would be necessary to provide such evidence. Time-interval sampling is probably the operational aspect of the study with the greatest potential for differences. It has been found that on verification calls to sample libraries a month or more after the sampling, the library staff involved typically are not able to reconstruct from memory and records the precise periods sampled. Thus, for future studies of this type, quality checks or R&V analysis should be conducted concurrent with basic data collection.

In summary, the main photocopying survey is believed to provide a good baseline representation of 1976-77 photocopying in libraries. Considerations of sampling variability as well as sources of possible systematic differences point to the borrowings data as subject to greater caution (as having potentially larger relative errors) than the volume and characteristics data. Similarly, estimates for Special libraries and to somewhat lesser extent for Federal libraries are subject to greater qualifications than those for Public and Academic libraries.

Standard Errors

Tables B.2 and B.3 present the standard errors of the estimates of the total number of photocopy items requested for local users and requested for interlibrary loan. These are presented separately for all domestic photocopy items, photocopy items under six years old and not for replacement or classroom use, and for greater than 5 copies.

Table B.2 STANDARD ERRORS OF TOTALS OF NUMBER OF PHOTOCOPY ITEMS REQUESTED FOR LOCAL USERS

(Thousands of Photocopy Items)

Type of Borrowing Library	All Domestic Photocopy Items		Under 6 Years		Under 6 Years and Greater Than 5 Copies	
	Size of Estimate	Estimated Standard Error	Size of Estimate	Estimated Standard Error	Size of Estimate	Estimated Standard Error
Public	7,383	3,739	5,930	2,789	5,520	2,773
Academic	1,758	1,402	1,060	973	1,040	822
Special	7,933	2,187	6,360	1,175	4,960	1,364
Federal	1,958	598	1,590	86	1,570	478
Total	19,032	3,424	14,940	3,054	12,880	1,849

Table B.3 STANDARD ERRORS OF TOTALS OF NUMBER OF PHOTOCOPY ITEMS REQUESTED FOR INTERLIBRARY LOAN

(Thousands of Photocopy Items)

Type of Borrowing Library	All Domestic Photocopy Items		Under Six Years and Not For Replacement Or Classroom Use		Under Six Years, Not Replacement or Classroom Use, & Greater Than 5 Copies	
	Size of Estimate	Estimated Standard Error	Size of Estimate	Estimated Standard Error	Size of Estimate	Estimated Standard Error
Public	1,010	155	440	116	90	10
Academic	1,130	128	430	98	140	12
Special	1,250	539	830	342	220	62
Federal	380	12	260	62	55	9
Total	3,770	580	1,960	379	505	49

APPENDIX C

AN ANALYSIS TO PROVIDE ESTIMATES OF THE DISTRIBUTION OF PHOTOCOPYING BY SERIAL TITLES

The CONTU guidelines, while making an important contribution to interpretation of the Copyright Law, created some statistical estimation problems unanticipated at the beginning of the project. The guidelines suggest that, for interlibrary loans, photocopy items be considered eligible for royalty payment only when six or more photocopy items are made for a given serial publication within a one year period. This rule applies after other fair use exemptions are excluded. This presents a difficult estimation problem since it is necessary to estimate the distribution of photocopying as well as totals and averages from a sample over time as well as libraries. Estimates of the volume of photocopying are based on observing the amount of photocopying that takes place over a designated period of time (say, one to three weeks) from a sample of libraries chosen from a population of 21,280 libraries in the United States. By observing the number of photocopy items that are made over one week, one can estimate the amount that the library makes in one year (considering seasonal variation and day of the week effects). By properly weighting the libraries in the sample, the total photocopying can be estimated for the 21,280 libraries in the population.

However, this relatively simple approach cannot be taken in estimating the distribution of photocopying. The problem is, for example, that if we observe in a library that twenty serial titles have fewer than six photocopy items made over a period of one week, it is not valid to project the twenty titles by 52 nor is it correct to project the number of photocopy items observed under six copies by a factor of 52. In order to make an estimate of the number of titles and photocopy items under six photocopy items over a year, it is necessary to estimate the entire distribution of photocopy items. That is, the proportion of titles having 1, 2, 3 — and so on photocopy items over the sample period must be determined and this distribution then projected to the entire year. If this can be done, the estimate of the number of photocopy items under six observed in the sample of libraries can then be projected to the entire population of libraries.

A second major estimation problem is that it is useful to estimate the average number of eligible photocopy items that exist over all libraries for individual serial titles. The problem is that the principal sampling unit is not a serial title. As the number of sample libraries is increased, the number of serial titles observed in the sample also increases. The increase in the number of titles is not proportionate to the increase in sample size, however, since there is considerable overlap among the titles copied. Thus, as the number of sampled libraries increases, the estimated total number of photocopy items increases in proportion and the observed number of serial titles increases but at a decreasing rate. If one were to estimate the average number of photocopy items per title based on the titles observed in the sample, a small sample would yield a smaller estimate of photocopy items per title than a large sample would. Thus, a true estimate of the number of photocopy items per serial title requires a means of estimating the number of titles at various sample sizes as well as the number of photocopy items. Procedures for handling these two estimation problems are discussed below.

Both estimation problems (i.e., estimating the distribution of photocopy items per title and number of titles) are attacked by using data from MINITEX. MINITEX, an organization that serves libraries from Minnesota and surrounding states by processing interlibrary loan requests, graciously agreed to devote one year's accumulated interlibrary loan requests for use in this study. This amounted to approximately 130,000 transactions, of which about 55,000 were domestic serial titles. These data provided us with a means of weighting library observations for seasonal and day of the week effects. That is, we noted for each sample library the month and day of the week they counted their photocopy items. We then observed the average number of photocopy items observed in similar types of libraries in MINITEX (Public, Academic and Special) for the same months and days of the week. This provided an excellent means of adjusting all sample observations for these two time effects. The MINITEX data also provided evidence to cross-check the results from the national library survey that involved interlibrary loan estimates. Finally, and most importantly, the MINITEX data also provided a means of overcoming the two estimation problems mentioned above.

The procedure used to derive estimation methods, was to obtain a computer print-out of observations over one week and use this result to compare with results for the entire year. A "typical" week was chosen from an average month for each type of library. Included in the analysis are 26 Public libraries, 68 Academic libraries and 38 Special libraries. There were no libraries classified as Federal in the MINITEX data base. The distribution of the number of photocopy items per serial title for the three types of libraries is given in Table C.1. It covers the sample week only.

Table C.1 SAMPLE WEEK DISTRIBUTION OF PHOTOCOPY ITEMS PER SERIAL TITLE - MINITEX (1976)

Type of Library		No. of Photocopy Items 1	2	3	4	5	6	7	8	9	10	>10
Public	No. of Serials	54	7	2	2	0	0	0	0	0	0	0
	Cum. Prop.	.831	.938	.969	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Academic	No. of Serials	446	56	19	7	3	4	2	3	0	0	0
	Cum. Prop.	.826	.930	.965	.978	.983	.991	.994	1.00	1.00	1.00	1.00
Special	No. of Serials	70	11	4	1	0	0	0	0	0	0	0
	Cum. Prop.	.814	.942	.988	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

SOURCE: King Research, Inc.: MINITEX data base.

The entries in Table C.1 are totals over the types of libraries indicated. The table can be read as follows. In Public libraries, there were 54 serials that had one photocopy item, 7 serials that had two photocopy items, 2 serials that had three photocopy items and two serials that had four photocopy items. Thus, there were 65 serials that had a total of 82 photocopy items for an average (f)* of 1.26 photocopy items per serial title. Similarly, the cumulative proportion of serial titles is .831 for one photocopy item; .938 for two photocopy items and so on.

The data for the entire year is given in Table C.2.

*Average here is designated as f because this measure, as shown later, will be used as an adjustment factor (f).

Table C.2 ANNUAL DISTRIBUTION OF PHOTOCOPY ITEMS PER SERIAL TITLE - MINITEX (1976)

Type of Library		No. of Photocopy Items 1	2	3	4	5	6	7	8	9	10	>10
Public	No. of Serials	1,571	326	113	60	28	19	11	5	6	5	16
	Cum. Prop.	.728	.879	.931	.959	.972	.981	.986	.988	.991	.993	1.00
Academic	No. of Serials	13,394	3527	1439	755	414	291	183	138	85	65	347
	Cum. Prop.	.649	.820	.890	.926	.946	.960	.969	.976	.980	.983	1.00
Special	No. of Serials	1,901	429	185	118	57	33	25	11	14	4	70
	Cum. Prop.	.673	.824	.890	.932	.952	.964	.972	.976	.981	.983	1.00

SOURCE: King Research, Inc.: MINITEX data base.

These data may be interpreted in the same way as data in the Table C.1. The cumulative proportions from Tables C.1 and C.2 are plotted in Figure C.1 which is scaled as a lognormal probability distribution. The number of photocopy items are plotted (in logarithmic scale) against the corresponding cumulative proportion.

The distribution curves of the sample data are quite similar. The slopes are very close, except that the Special libraries drop off after two photocopy items. It is believed that this is an anomoly due to the small sample size. The averages for the three sample curves are 1.26 photocopy items per serial for Academic and Special libraries and 1.33 for Public libraries. The distribution curves for the entire year's data are also parallel but separated more.

It is highly significant that the curves of the sample distribution are parallel to the curves of the entire year's data. The f values (averages) and the distance between the sample curves and entire year's curves are given below:

	Sample f_1 Values	Year f_2 values	Relationship $(f_2 \div f_1)$	Relationship of Distance Between Curves	E
Public	1.26	1.66	1.32	1.55	1.17
Academic	1.33	2.07	1.56	1.95	1.25
Special	1.26	2.02	1.60	2.00	1.25

Since all of the curves appear to be parallel, the factor E will be used to extrapolate from short time period data from sample libraries in the national library survey to estimate the distribution over an entire year for these libraries.

Another very important characteristic of the relationship of the year's data is discussed at this point. As noted above, the averages for the three curves for the entire year's data are 2.07 photocopy items per serial for Academic, 1.66 for Public and 2.02 for Special libraries. It is noted that the distances between these three curves are very closely related to the three averages (f values). For example, the relationship of Academic to Public libraries is 2.07 ÷ 1.66=1.25. The distance between the two curves is found to be about 1.31 over the range of the curves. The relationship between the curves of Special and Public libraries is 1.22 and relationship of the distance between the two curves is about 1.23. Finally, the relationship between the curves of Academic and Special libraries is 1.03 and the relationship of the distance appears to be about 1.06. It is found that distribution curves from nearly all of the individual libraries are similarly shaped and that the relationship of the f factors and the distance between the curves are all very similar.

Another important issue is determination of a procedure for estimating the distribution of photocopy items summed over all libraries. Again, the MINITEX data provide a good basis for making this estimate. In this case only data from the entire year are analyzed. Data were tabulated by serial title for 6,345 titles found to have at least one photocopy item over the entire year. A sample of 317 of these titles were chosen to form a basis of the distribution of photocopy items per title (as well as to provide other analysis). The distribution observed for these 317 titles is given below:

	No. of Photocopy Items					
	1	2	3	4	5	6-10
No. of Serials	96	48	26	21	13	59
Cum. Prop.	.303	.454	.536	.603	.644	.830
	11-20	21-30	31-40	41-50	51-100	>100
No. of Serials	30	10	7	3	3	1
Cum. Prop.	.924	.956	.978	.987	.997	1.00

The cumulative distribution is plotted in Figure C.1 along with the three types of library data from Table C.2. The average (f) for the number of photocopy items per serial is 8.7 over all 132 MINITEX libraries. It is noted that all the curves are all nearly parallel. Also, the relationship between the three individual library curves and the curve of data summed over libraries is similar. These relationships are given as follows:

Type of Library	Year f_2 values	Total f_3 values	Relationship ($f_3 \div f_2$)	Relationship of Distance Between Curves
Public	1.66	8.7	5.2	5.5
Academic	2.07	8.7	4.2	4.0
Special	2.02	8.7	4.3	4.5

These data appear to show that one can project sample library data to the entire population if f_2 and f_3 factors are known. It is believed that this relationship holds because the number of observations are large enough that the effect of potential high clustering within individual libraries is balanced by the large number of photocopy items over the sample. The relationship holds very nicely for all libraries that have a large enough number of observations to plot more than three points on the curve. The fact that the curves are parallel and definable in terms of the averages (f) makes it possible to provide gross estimates from the national library sample for individual libraries (hence, the population totals) and for sums over libraries. However, to do this one must be able to estimate f at various values of number of photocopy items or corresponding number of serial titles.

The MINITEX data also provide a basis for estimating the relationship between number of serial titles (x) and number of photocopy items (y). Values of x and y observed at MINITEX are plotted in Figure C.2. Here the one week sample data are plotted with circles around the points and the one year data are plotted without circles. The figure is given on three sheets with values of x ranging from 0 to 200 photocopy items, 201 to 2000 photocopy items and 2001 to 10,000 photocopy items. A line is drawn on each sheet to show the points at

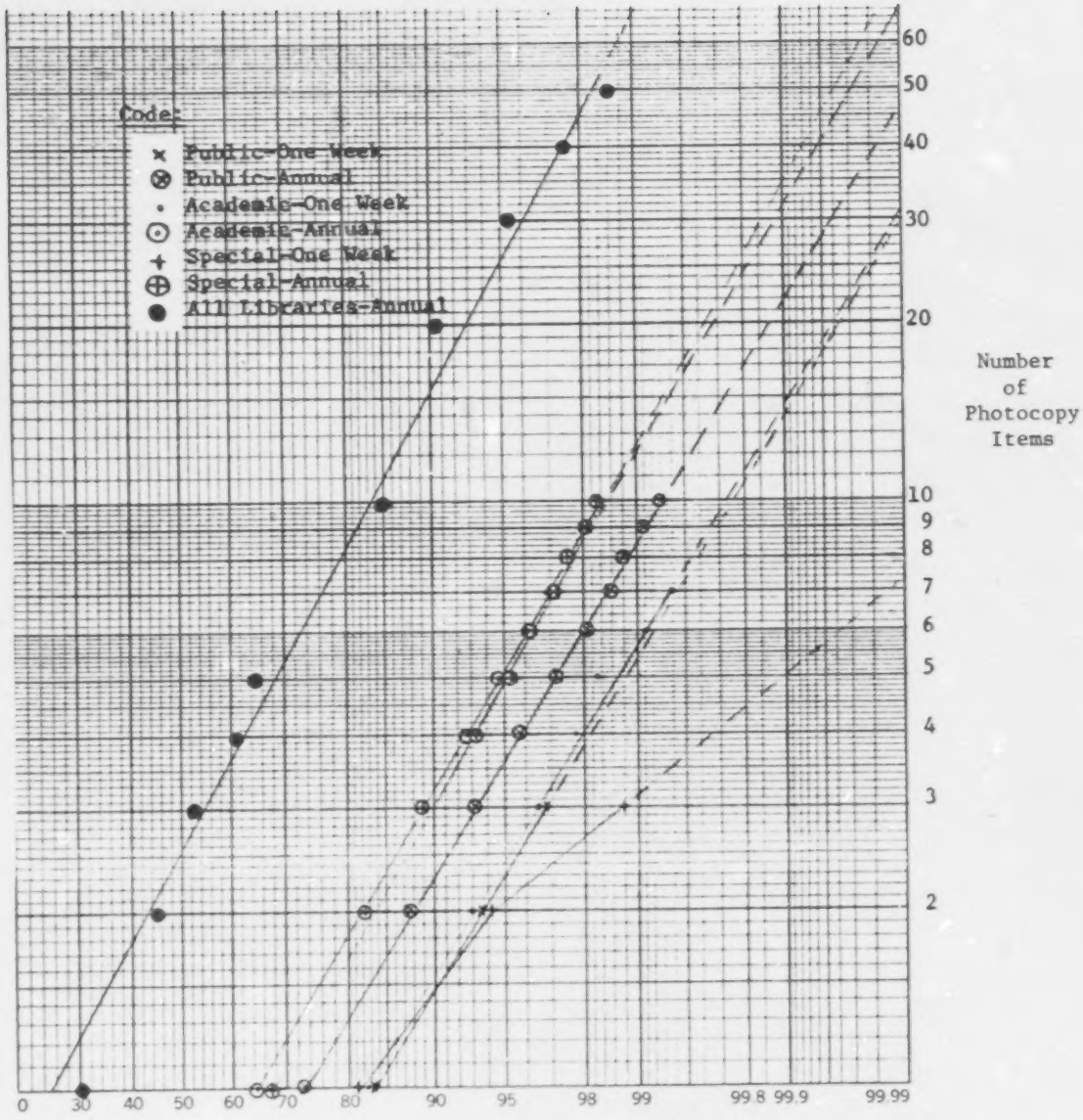


Figure C.1 Sample Week and Annual Distribution of Photocopy Items Per Serial Title-MINITEX (1976)

which x = y. The observations by definition must lie on or below that line since the total number of photocopy items must be greater than the number of serial titles (that have at least one photocopy item).

It is noted on the graph that there is no discernable difference between the week sample points and the total year points for values below 80 photocopy items. Perhaps they are a little bit higher. Similarly, there is no real distinction among Public, Academic and Special libraries. Clearly, as the number of photocopy items increase (x) the increase in number of serial titles (y) dampens and in fact approaches an asymptote which is the total number of serial titles in the population (6,345). This general form of curve is referred to as a modified exponential curve expressed as follows:

(1) $y = a + bc^x$

where: y is number of serial titles
x is number of photocopy items
a is an asymptote (total serial titles)
b is a model parameter
c is a model parameter

We would like this model to go through the origin since y = 0 when x = 0. Here we find that:

(2) $y = a\,(1-c^x)$

Through trial and error we find that a reasonable fit of the data is

$a = 6,345$
$c = .999918$

This curve is given in Figure C.2. We find that the model predicts slightly low below 100 photocopy items but fits quite well above that value. The higher values are the ones that are most important from the standpoint of estimation from the national library survey. In other words, we can estimate the values of photocopy items (x) quite well. From these values of x we can estimate the number of serial titles (y) and, hence, the f-factor ($x \div y$). Some examples are given below for the national library survey data.

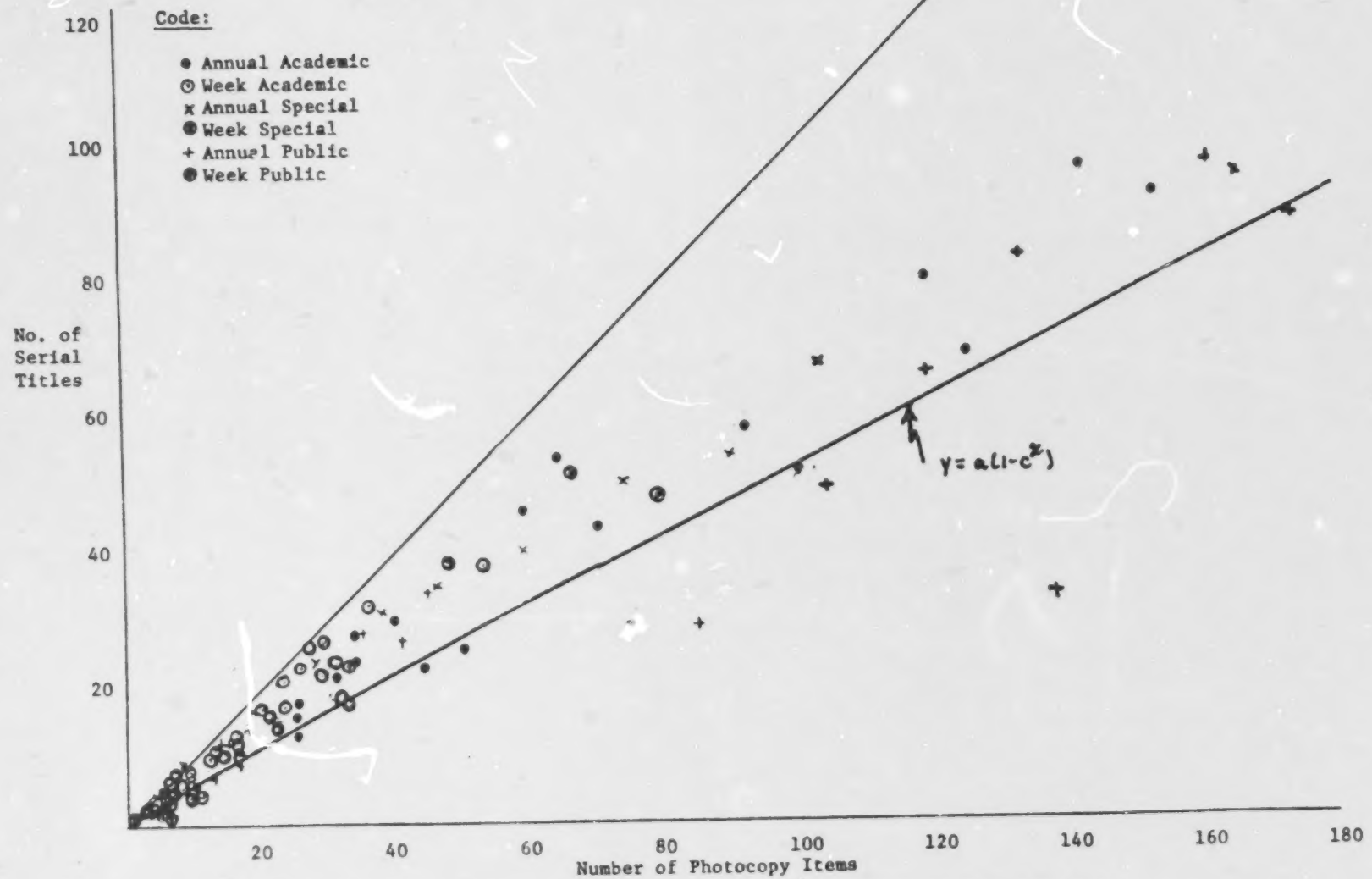


Figure C.2.a. Number of Photocopy Items (x) Versus Number of Serials (v)

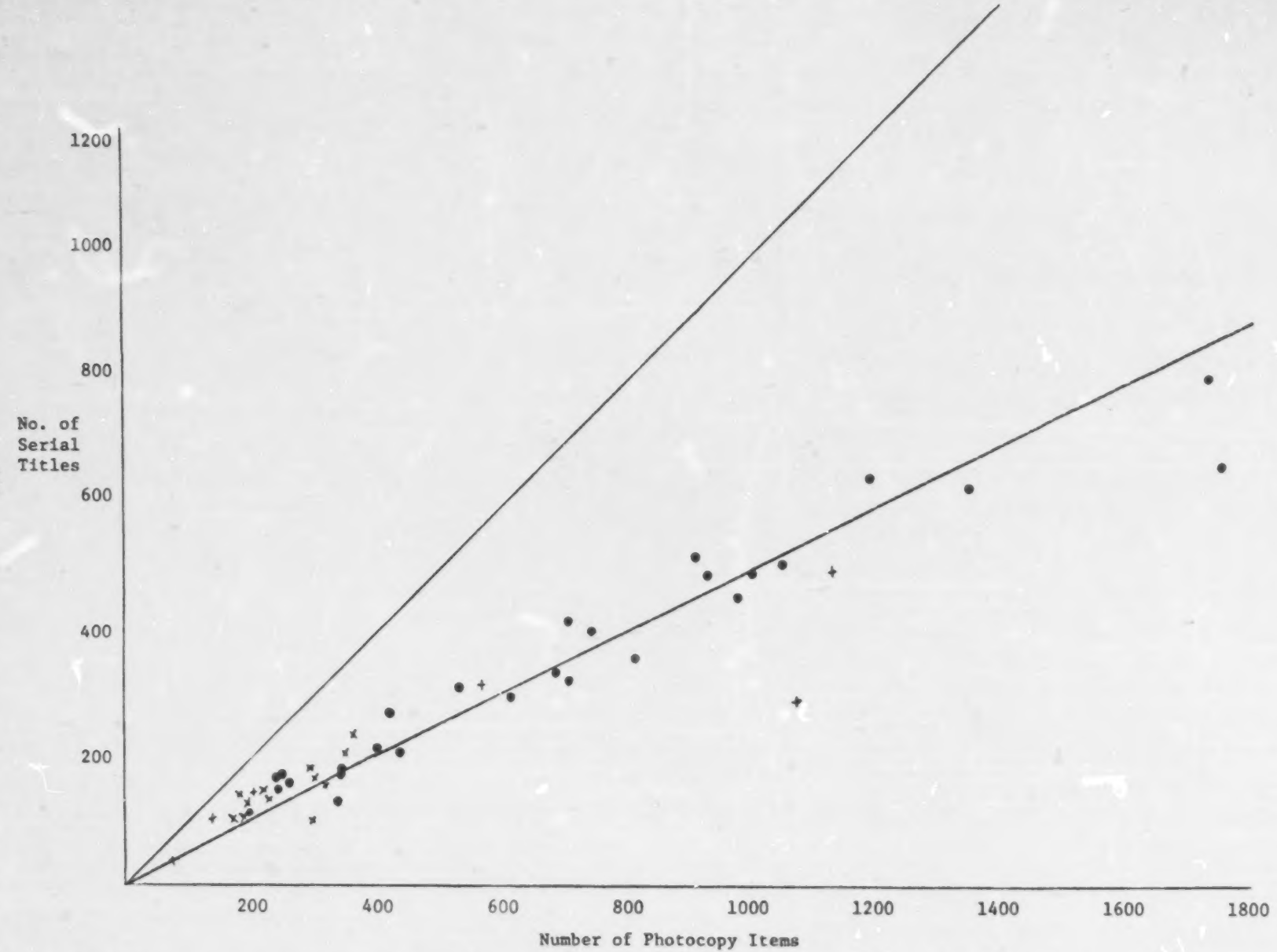


Figure C.2.b. Number of Photocopy Items (x) Versus Number of Serials (y)

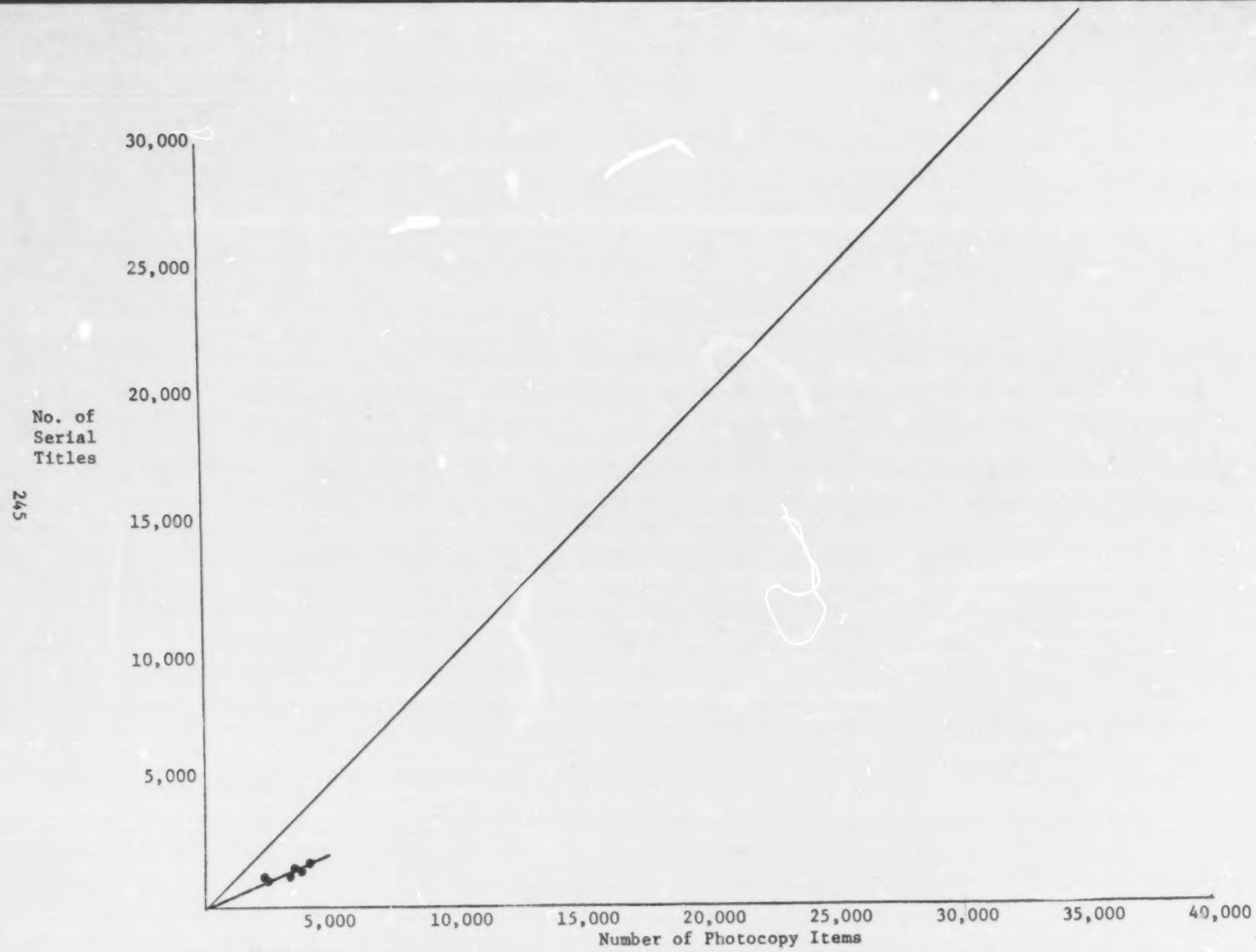


Figure C.2.c. Number of Photocopy Items (x) Versus Number of Serials (y)

The example given below is for interlibrary loans for Academic libraries only. Figures are given for the other three types of libraries, the total across libraries and local users for all types of libraries without comment, since the results are self-evident after the explanation for one type of library is given. The distribution of photocopy items and number of serials is shown in Table C.3 below.

Table C.3 DISTRIBUTION OF NUMBER OF PHOTOCOPY ITEMS AND SERIALS FOR ACADEMIC LIBRARY

	Number of Photocopy Items									
	1	2	3	4	5	6	7	8	9	10
No. of Serials	838	77	34	12	5	1	1	1	1	2
Cum. Prop. of Serials	.862	.941	.976	.989	.994	.995	.9957	.9967	.9977	.9998

SOURCE: King Research, Inc.

This table can be read as follows: 838 serials had one photocopy item made, 77 serials had two photocopy items made and so on in the sampled Academic libraries. These data are plotted in Figure C.3. The line on the figure can be read as follows: 86 percent of the serial titles had one photocopy item; 94 percent of the serial titles had one or two photocopy items; 97.6 percent of the serial titles had one, two or three photocopy items made and so on. It is pointed out that individual libraries, in which there were observations, had very similar distributions slope of the curve.

The average number of photocopy items (x) in Academic libraries is 370 (Table 4.15). If one applies the equation on page 237 we arrive at an estimate of 190 serials (y) that produced the average of 370 photocopy items.

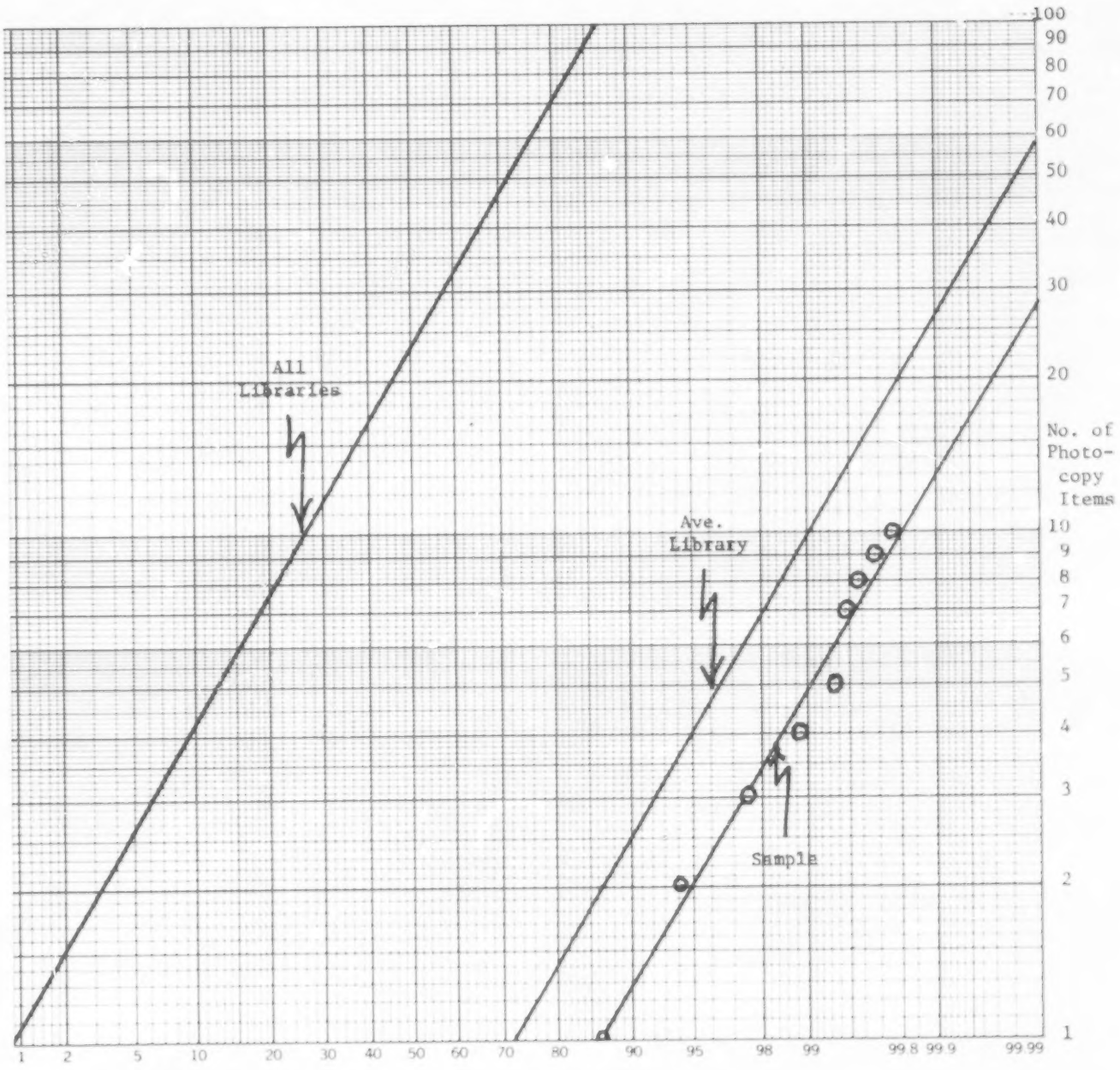


Figure C.3 Distribution of Photocopy Items by Serial Title for Academic Libraries

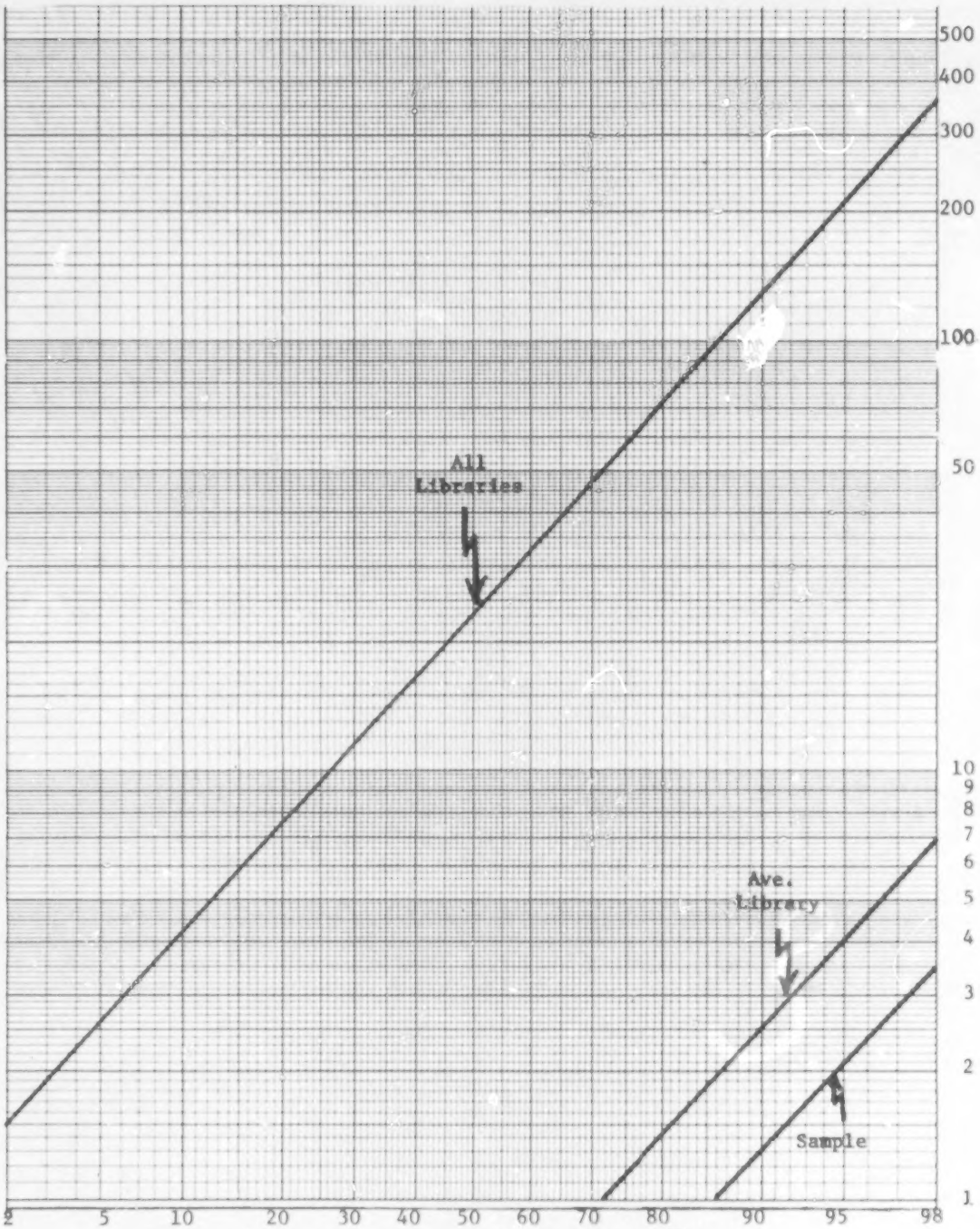


Figure C.3.a Distribution of Photocopy Items by Serial Title for Academic Libraries

Therefore, f is estimated to be 1.95 (370 ÷ 190). The extrapolation factor is computed as 2.00 (1.95 ÷ 1.25 x 1.28); where 1.28 is an adjustment factor observed in the MINITEX data. Therefore, the distribution of photocopying in an average Academic library is found by extrapolating each point on the line in Figure C.3 by 2.00. This distribution is also drawn on Figure C.3. As a check on the validity of this distribution, one can determine the total average number of photocopy items by summing the proportion of serials times number of photocopy items. This is done below.

Table C.4 DISTRIBUTION OF NUMBER OF PHOTOCOPY ITEMS BY SERIALS

	Number of Photocopy Items									
	1	2	3	4	5	6-10	11-20	21-30	31-40	41-50
Cum. Prop. of Serials	.72	.865	.921	.950	.965	.9815	.9910	.9985	.9995	.9998
Prop. of Serials (P)	.72	.145	.056	.029	.015	.0165	.0095	.0075	.0010	.0003
No. of Serials	.72	.29	.168	.116	.075	.124	.144	.188	.035	.014

SOURCE: King Research, Inc.

The average number of photocopy items is estimated to be 1.87 photocopy items per serial per library. This is found by multiplying the number of photocopy items times proportion of serials (last row). Summing the last row gives the average. Therefore, the total number of photocopy items for all Academic libraries is estimated to be 1.08 million photocopy items (1.87 x 190 serials x 3,030 libraries). This compares closely with 1.01 million photocopy items estimated for Academic libraries by straight projection (see Table 4.10). It is noted also that the proportion of photocopy items made from serials with fewer than six photocopy items is found by summing the last row (Serials times Proportion of Serials) from 6-10 through 41-50 photocopy items and dividing this by 1.87 photocopy items. This comes to 0.27 (0.501 ÷ 1.87). Thus, 27 percent of the photocopy items are estimated to be from serials that have more than five photocopy items made. Approximately 3.5 percent of the serials have more than five copies made. The approach above is that used to estimate distributions and proportion of photocopy items (under six copies) in Section 4 for the libraries' perspective.

The next step is to estimate the total number of photocopy items produced across all libraries. This information is of interest to publishers and

is given in Section 5. These projections are not as analytically firm as with the previous results because we do not have a data base comparable to MINITEX to validate results. We have observed over the 132 MINITEX libraries that 6,345 serials produced the distribution shown in Figure C.1. This distribution is parallel to the observations from the three types of libraries. Also, the distance to the curve seems to be estimated by the ratio of f-values of the distributions. This relationship is used to extend the data even further to all libraries in the universe. Here, the equation given before can not be used to estimate number of serials (y) from number of photocopy items (x) because the values of y have approached an asymptote (a). Therefore, we have to make some judgement concerning the number of serials to estimate (f). We have chosen to use 10,000 titles because that is our best estimate of the current number of scientific and technical periodicals published in the U.S. (4). Also, we have estimated that a very large proportion of the photocopy items involve scientific and technical serials.

There are an estimated 1.01 million photocopy items made by Academic libraries for interlibrary loans. If there are 10,000 serials photocopied, the average number of photocopy items per serial title would be 100 (f). Therefore, an extrapolation factor (E) for the new distribution would be 51.3 (100 ÷ 1.95). This distribution is also plotted in Figure C.3. It is noted that the new distribution quickly goes over the scale provided in Figure C.3. Therefore, the three distribution curves are also displayed in Figure C.3(a). Here we find that 52 percent of the serials have less than 25 photocopy items, 20 percent have between 26 and 50 photocopy items; 14 percent have between 51 and 100 photocopy items and 14 percent have over 100 photocopy items. This distribution gives us the same proportion of serials that will have various levels of photocopying performed on them. With exemptions left out, one can then estimate the respective proportion of eligible serials that will achieve various levels of photocopying. If one believes that there are more or fewer serial titles, the curve can be moved up or down correspondingly.

APPENDIX D

STAFF ACKNOWLEDGEMENT

We would like to acknowledge here the support given by our staff during the many months of data collection, coding, editing, and analysis. The following individuals made the analysis given in this report possible:

D. Begosh
M. Bender
C. Brideau
J. Briggs

A. Caplan
A. Chaney
R. Clark
S. Clark
T. Connors
R. Cotton

T. Davis
E. Dowd
T. Dowd
M. Durnam

S. Eckert
A. Esten

S. Fitzgerald
D. Fogel
C. Franklin
S. Fordham

M. Graziano

P. Jackson

M. Kane
T. Kellogg
C. Ketner
D. Ketner
L. King
M. King
S. King
K. Kott
J. Krintz
H. Kurtz

B. Long
M.J. Majowicz
M. Majowicz
J. Majowicz
R. Masonson
S. Molster
K. Motlagh

K. Oheim
M. Orsini

S. Price

C. Rohrbaugh
R. Rosenberg

H. Saba
R. Smith
G. Snyderman
C. Sullivan

T. Valeri

R. Woltman
S. Woltman

* U. S. GOVERNMENT PRINTING OFFICE : 1977 O - 245-358

ADVISORY
COMMITTEE

James Barsky, Senior Vice President, Academic Press
Lee G. Burchinal, Director, Division of Science Information, National Science Foundation
Joseph Becker, Commissioner, National Commission on Libraries and Information Science
Helene Ebenfield, Research Economist, Economics of Information Program, National Science Foundation1/
Robert W. Frase, Assistant Executive Director and Staff Economist, National Commission on New Technological Uses of Copyrighted Works1/
Martin Goland, Commissioner, National Commission on Libraries and Information Science
Michael Harris, Vice President, Wiley-Interscience, John Wiley & Sons, Inc., Publishers
John G. Lorenz, Executive Director, Association of Research Libraries2/
John P. McDonald, Director, University Library, University of Connecticut
Frank E. McKenna, Executive Director, Special Library Association
Douglas S. Price, Deputy Director, National Commission on Libraries and Information Science1/
Stephen T. Quigley4/, Director, Department of Chemistry and Public Affairs, American Chemical Society
Catherine D. Scott, Commissioner, National Commission on Libraries and Information Science
Barbara O. Slanker, American Library Association3/
Alphonse F. Trezza, Executive Director, National Commission on Libraries and Information Science
Robert Wedgeworth, Executive Director, American Library Association

1/Project monitors.

2/Alternate for John P. McDonald

3/Alternate for Robert Wedgeworth

4/Replacement for Richard L. Kenyon, deceased.